

Fig. 1

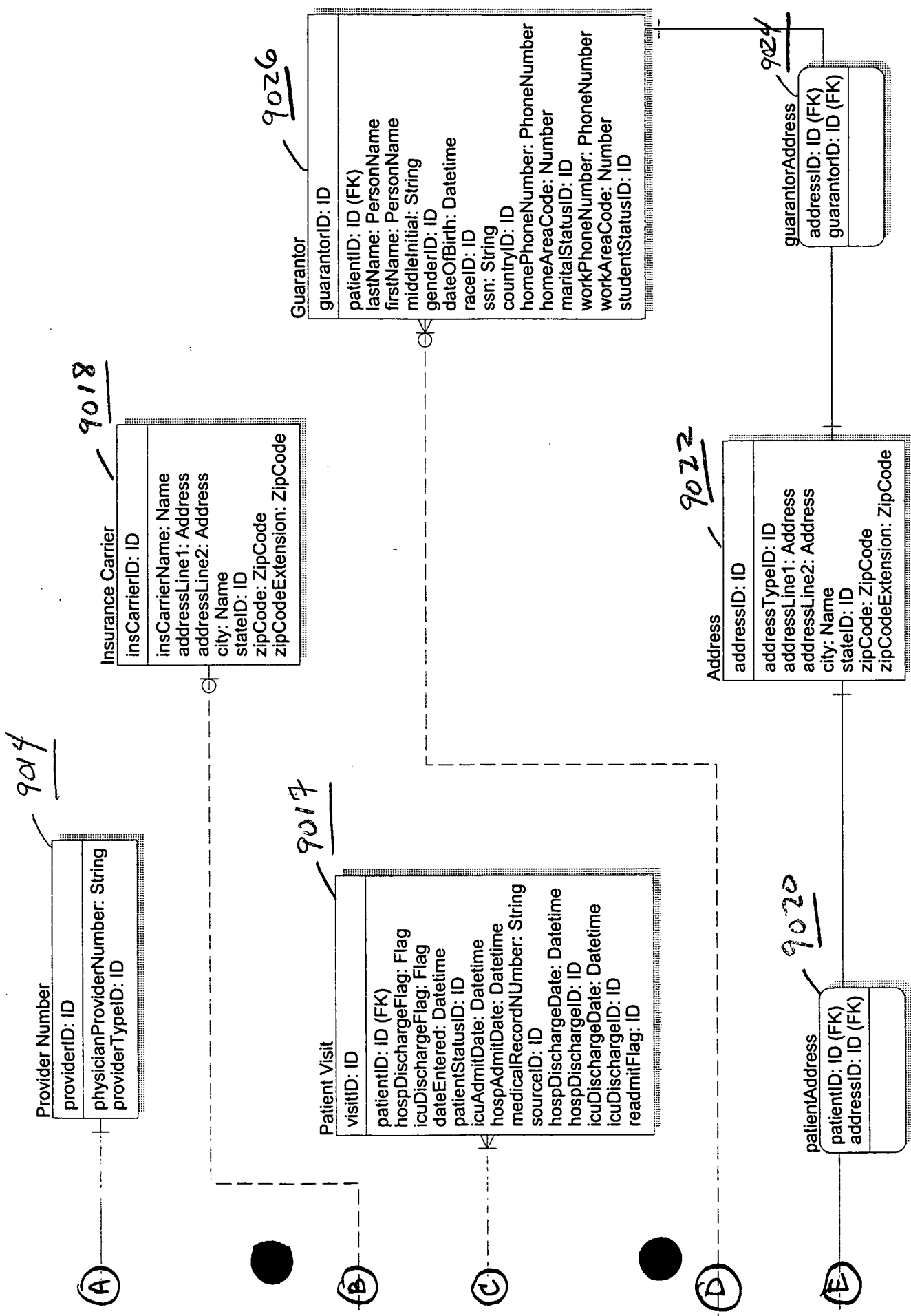


Fig 1A

Fig. 2

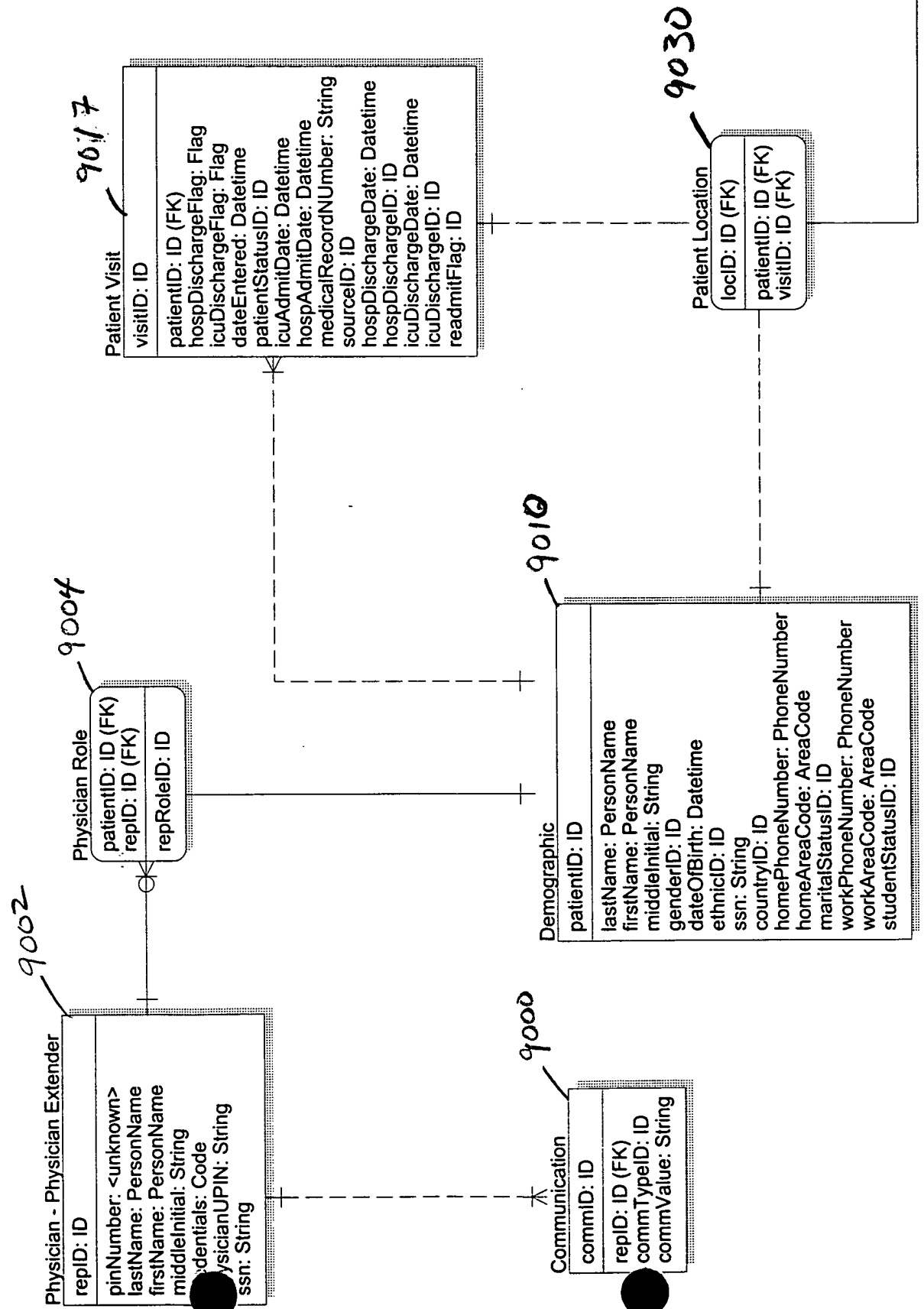


FIG. 2A

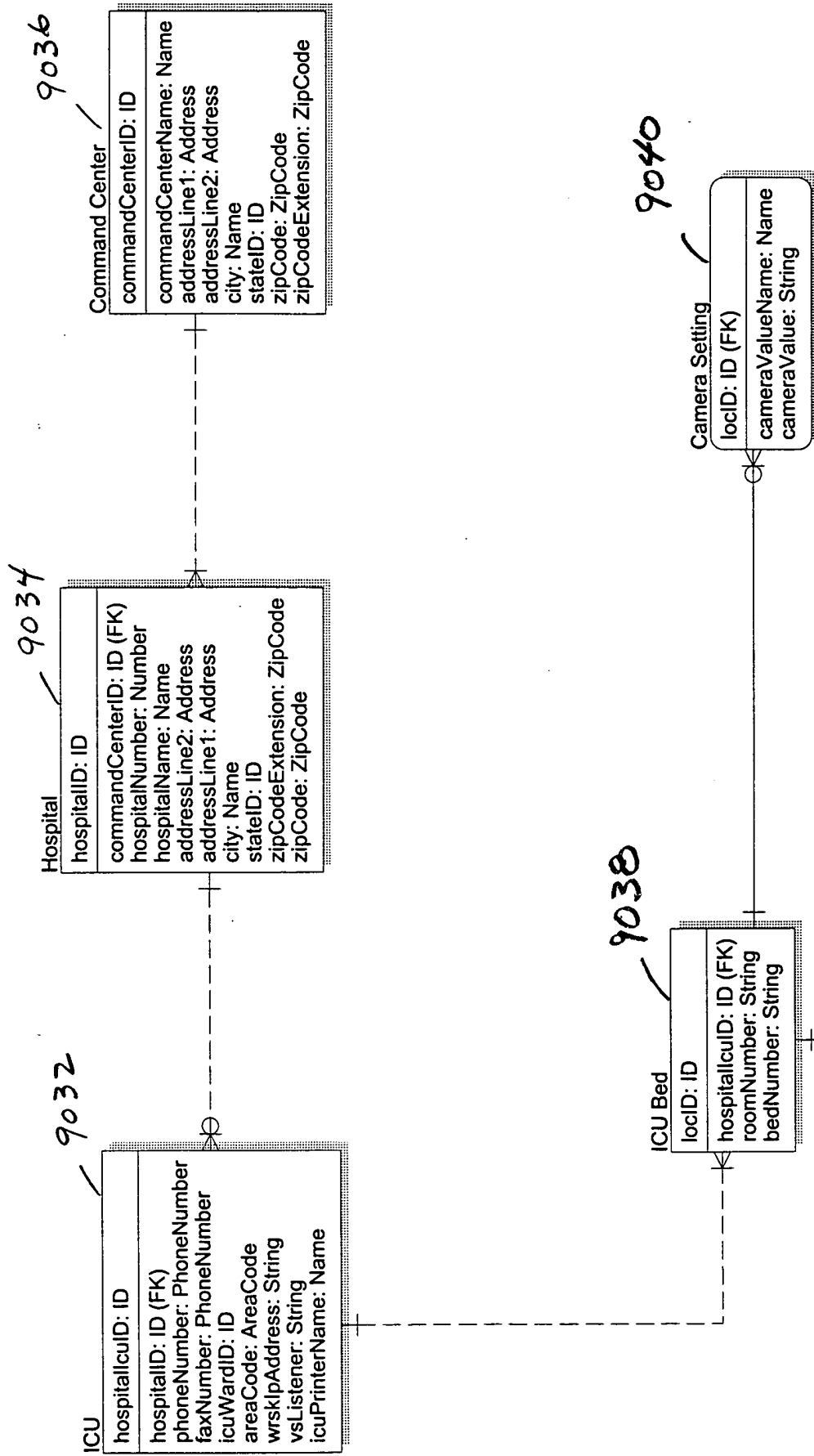


Fig. 3

901.7

Patient Visit

visitID: ID
patientID: ID (FK)
hospDischargeFlag: Flag
icuDischargeFlag: Flag
dateEntered: Datetime
patientStatusID: ID
icuAdmitDate: Datetime
hospAdmitDate: Datetime
medicalRecordNumber: String
sourceID: ID
hospDischargeDate: Datetime
hospDischargeID: ID
icuDischargeDate: Datetime
icuDischargeID: ID
readmitFlag: ID

904.4

medicalHistoryItem

medicalID: ID
noteID: ID (FK)
medicalValueID: ID
medicalText: Description
medicalTypeID: ID
medicalCategoryID: ID
medicalDate: Datetime

904.2

Note

noteID: ID
visitID: ID (FK)
repID: ID (FK)
dateEntered: Datetime
noteTypeID: ID

900.2

Physician - Physician Extender

repID: ID
pinNumber: <unknown>
lastName: PersonName
firstName: PersonName
middleInitial: String
credentials: Code
physicianUPIN: String
ssn: String

Fig. 4

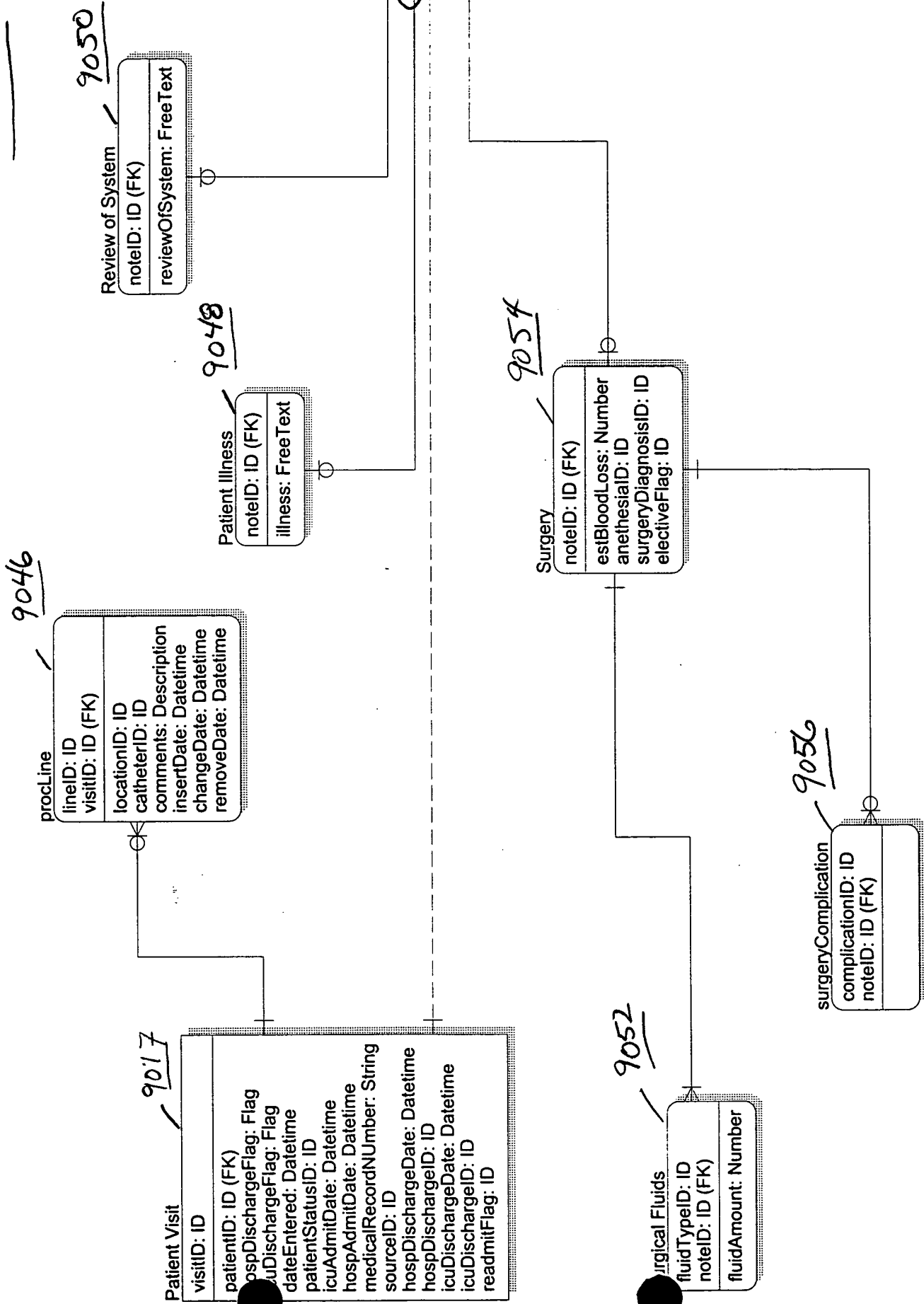
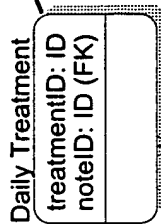


Fig. 4A

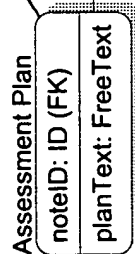
9060



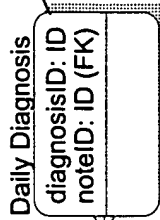
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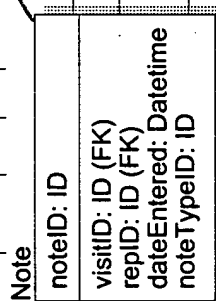
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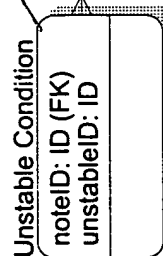
9068



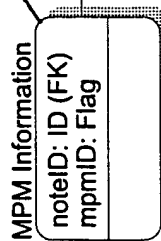
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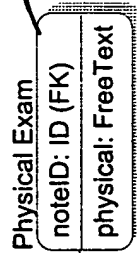
9070



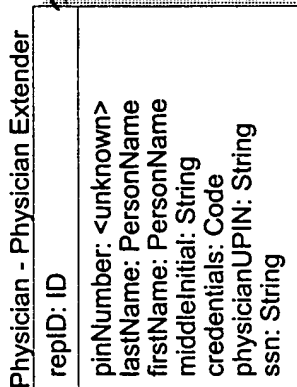
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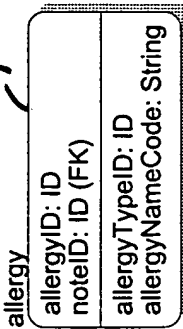
9074



9002



9076



(G)

(H)

(I)

(J)

(L)

(M)

(K)

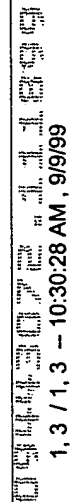


Fig. 5

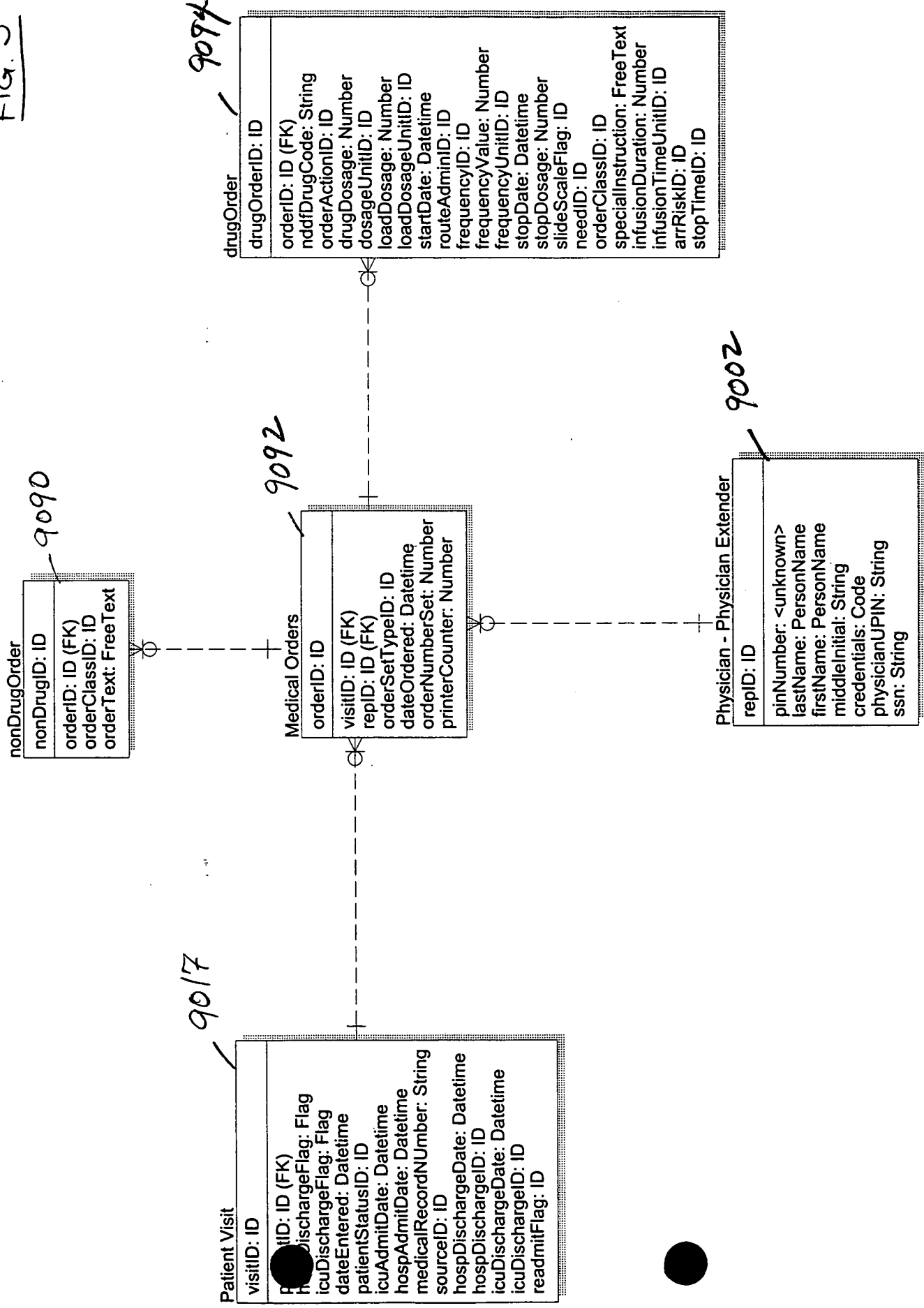
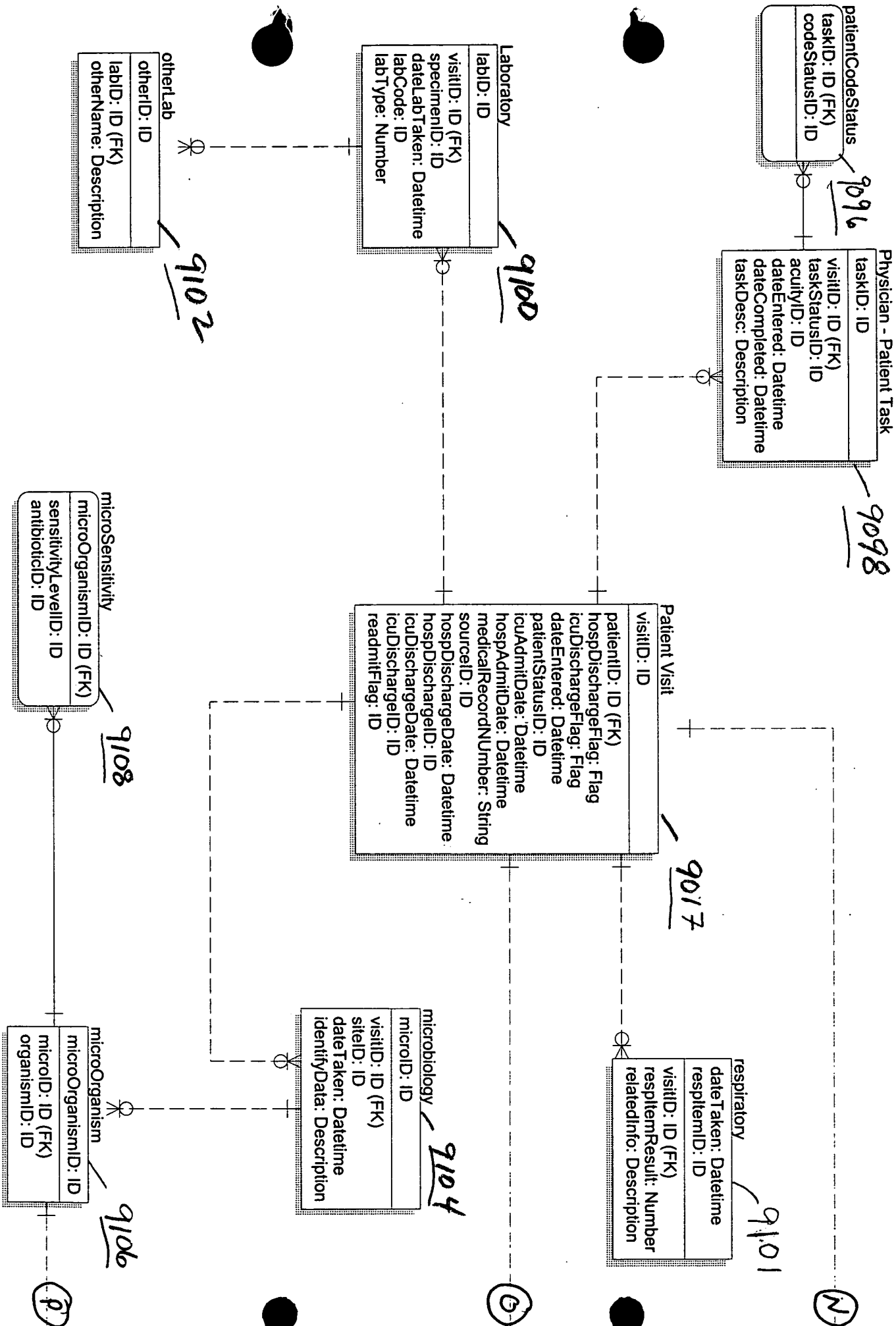


fig. 6



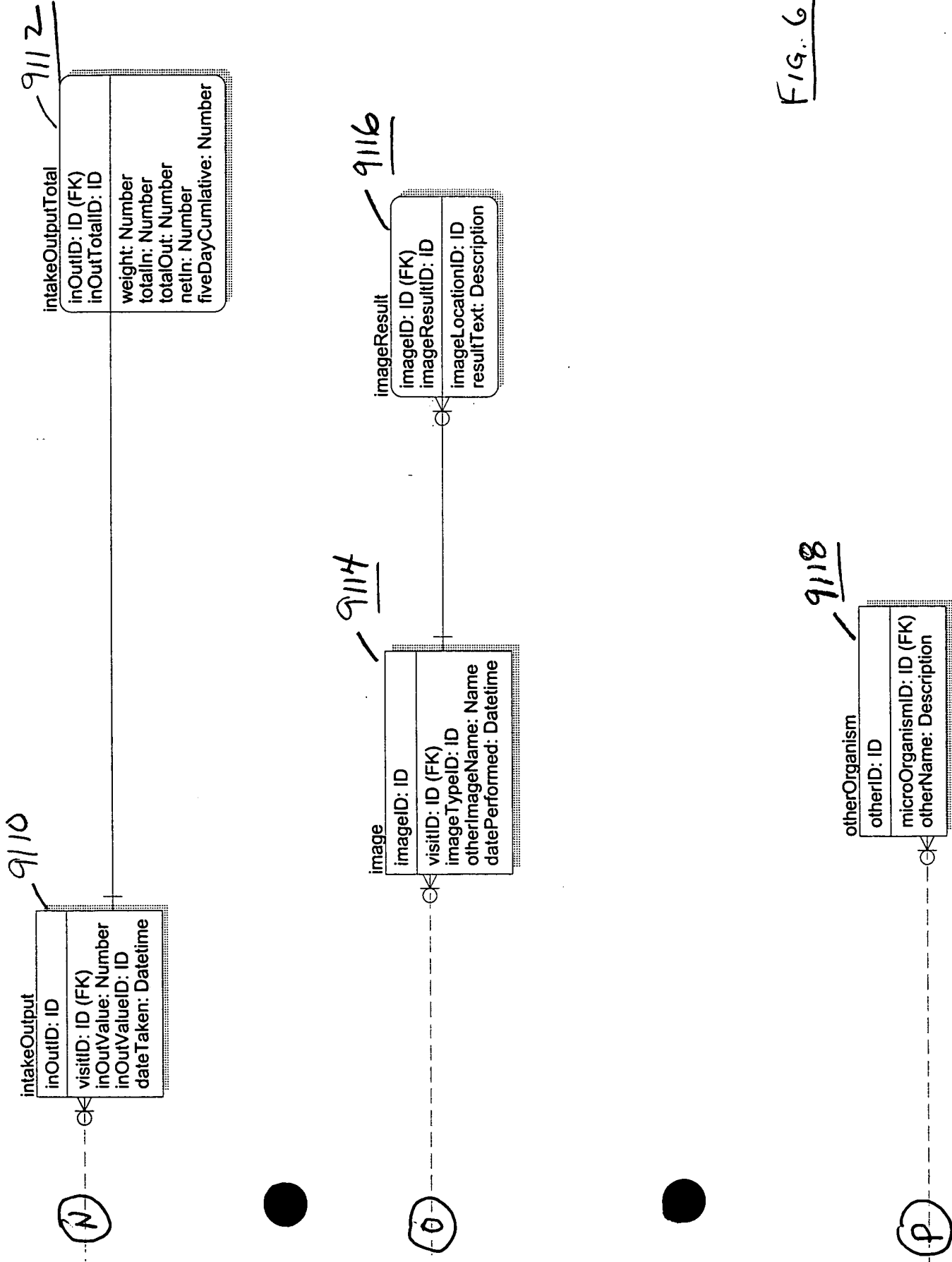


Fig. 6A

FIG. 7

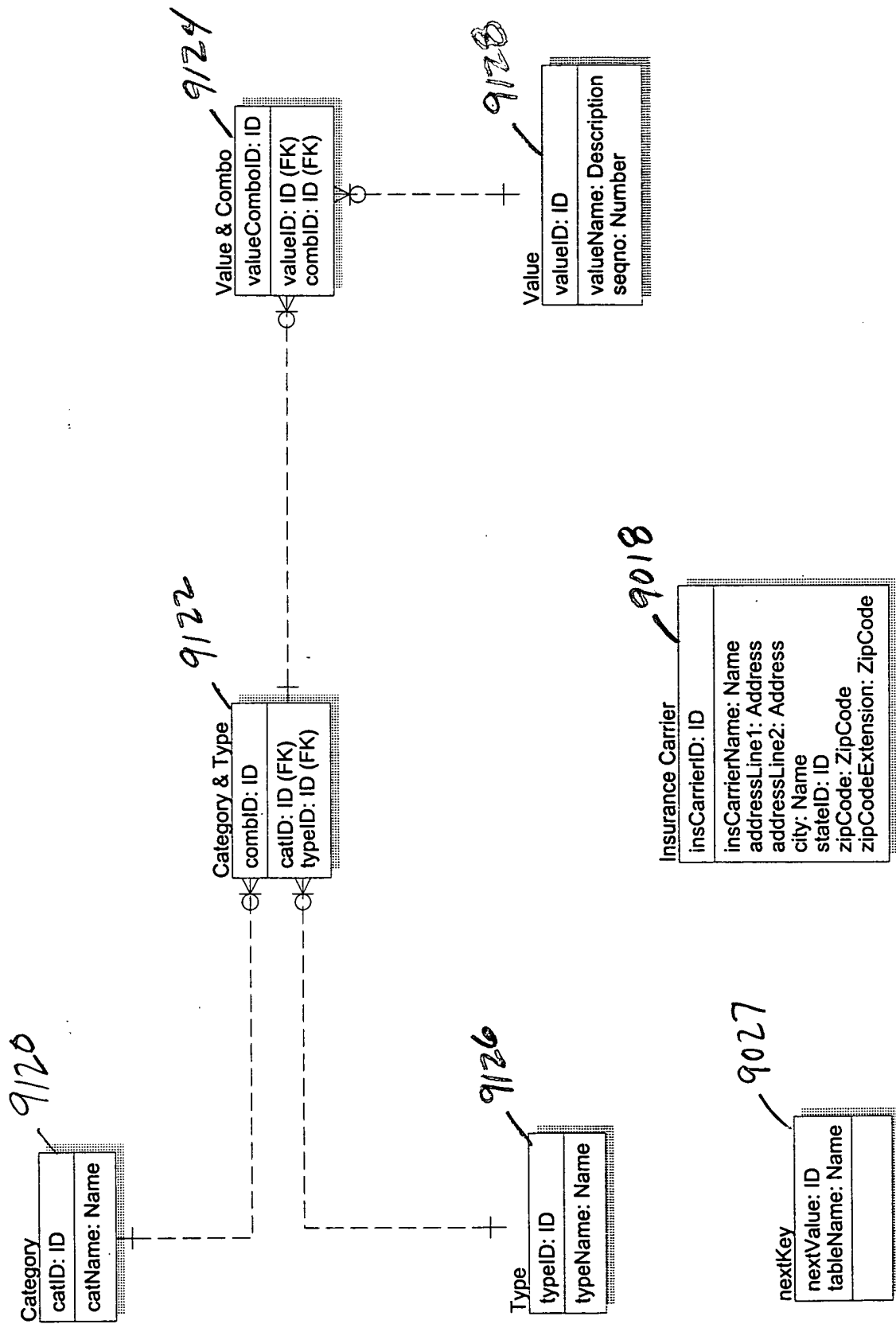


Fig. 8

9122

Patient Visit

visitID: ID
patientID: ID (FK)
hospDischargeFlag: Flag
icuDischargeFlag: Flag
dateEntered: Datetime
patientStatusID: ID
icuAdmitDate: Datetime
hospAdmitDate: Datetime
medicalRecordNumber: String
sourceID: ID
hospDischargeDate: Datetime
hospDischargeID: ID
icuDischargeDate: Datetime
icuDischargeID: ID
readmitFlag: ID

Vital Sign Detail

visitID: ID (FK)
stampDtm: Datetime
hospitalID: ID (FK)
patientID: ID
medicalRecNumber: String
obsDtm: Datetime
sendingApp: String
msgCtId: String
heartRate: Number
systemicSystolic: Number
systemicDiastolic: Number
systemicMean: Number
temperature: Number
saO2: Number
respiration: Number
PASystolic: Number
PADiastolic: Number
PAMean: Number
PAOP: Number
CVP: Number
eCO2: Number
CO: Number
ST1: Number
ST2: Number
ST3: Number

9120

Vital Sign Header

visitID: ID (FK)
stampDtm: Datetime
hospitalID: ID (FK)
patientID: ID
medicalRecNumber: String
patientName: PersonName
patientLastName: PersonName
patientFirstName: PersonName
patientClass: Code
carenetNum: String
carenetBedNum: String

9016

Demographic

patientID: ID
lastName: PersonName
firstName: PersonName
middleInitial: String
genderID: ID
dateOfBirth: Datetime
ethnicID: ID
ssn: String
countryID: ID
homePhoneNumber: PhoneNumber
homeAreaCode: AreaCode
maritalStatusID: ID
workPhoneNumber: PhoneNumber
workAreaCode: AreaCode
studentStatusID: ID

Hospital

hospitalID: ID
commandCenterID: ID (FK)
hospitalNumber: Number
hospitalName: Name
addressLine2: Address
addressLine1: Address
city: Name
stateID: ID
zipCodeExtension: ZipCode
zipCode: ZipCode

9034

Fig. 8A

9130

9120

Vital Sign Error Header

hospitalID: ID	medicalRecNumber: String
stampDtm: Datetime	patientName: PersonName
patientLastName: String	patientFirstName: String
patientClass: Code	carenetNum: String
carenetBedNum: String	

Vital Sign Log Header

hospitalID: ID	medicalRecNumber: String
stampDtm: Datetime	patientName: PersonName
patientLastName: String	patientFirstName: String
patientClass: Code	carenetNum: String
carenetBedNum: String	

Vital Sign Log Detail

hospitalID: ID (FK)	medicalRecNumber: String (FK)
stampDtm: Datetime	
obsDtm: Datetime	
sendingApp: String	
msgCtId: String	
heartRate: Number	
systemicSystolic: Number	
systemicDiastolic: Number	
systemicMean: Number	
temperature: Number	
saO2: Number	
respiration: Number	
PASystolic: Number	
PADiastolic: Number	
PAMean: Number	
PAOP: Number	
CVP: Number	
etCO2: Number	
CO: Number	
ST1: Number	
ST2: Number	
ST3: Number	

Vital Sign Error Detail

hospitalID: ID (FK)	medicalRecNumber: String (FK)
stampDtm: Datetime	
code: String (FK)	
obsDtm: Datetime	
sendingApp: String	
msgCtId: String	
heartRate: Number	
systemicSystolic: Number	
systemicDiastolic: Number	
systemicMean: Number	
temperature: Number	
saO2: Number	
respiration: Number	
PASystolic: Number	
PADiastolic: Number	
PAMean: Number	
PAOP: Number	
CVP: Number	
etCO2: Number	
CO: Number	
ST1: Number	
ST2: Number	
ST3: Number	

9132

CarenetPatientLocation

hospitalID: ID	carenetNum: String
carenetBedNum: String	
locID: ID (FK)	

ICU Bed

locID: ID	hospitalCtID: ID (FK)
roomNumber: String	
bedNumber: String	

Vital Sign ErrorCode

code: String	
description: String	

Distributed Architecture

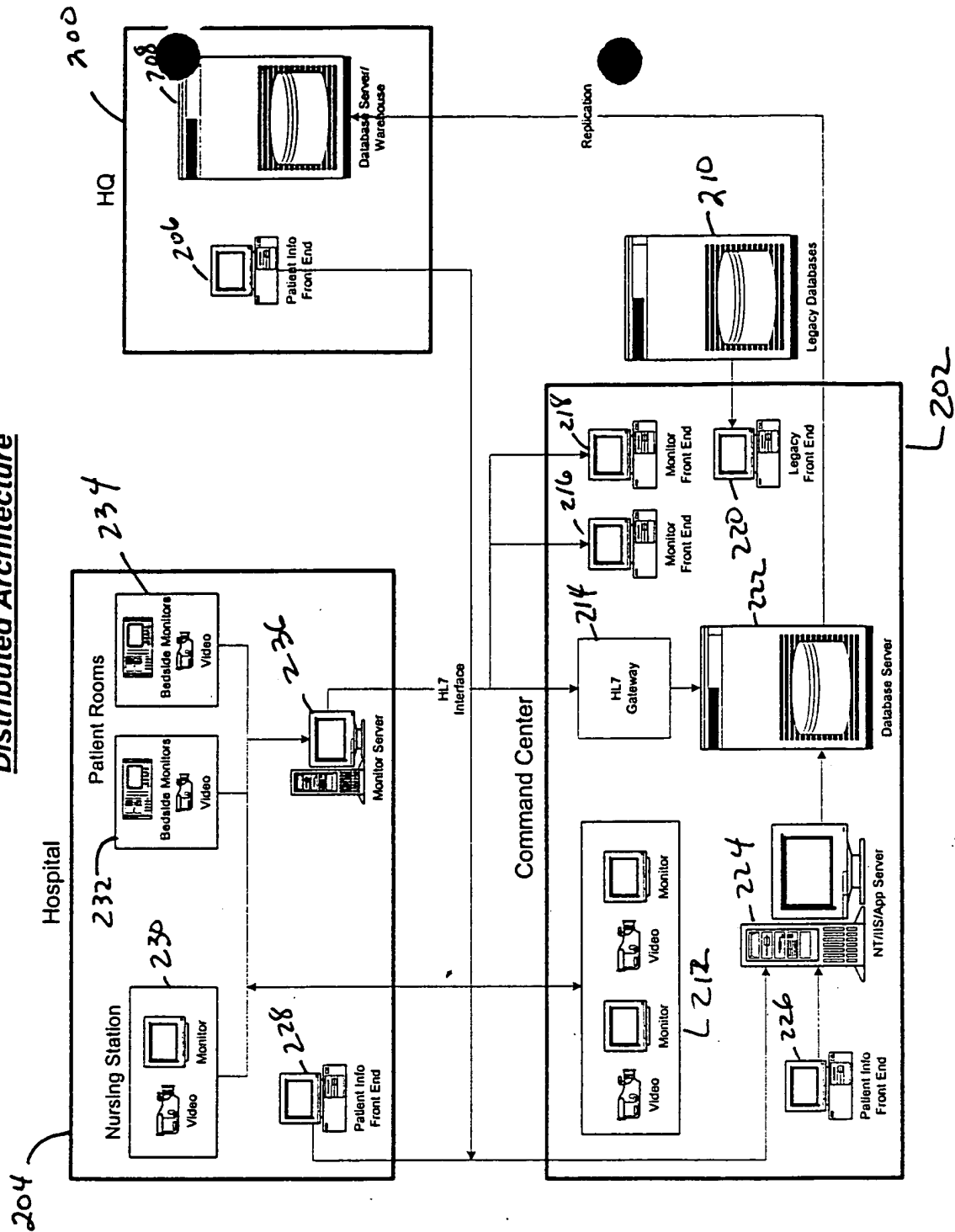
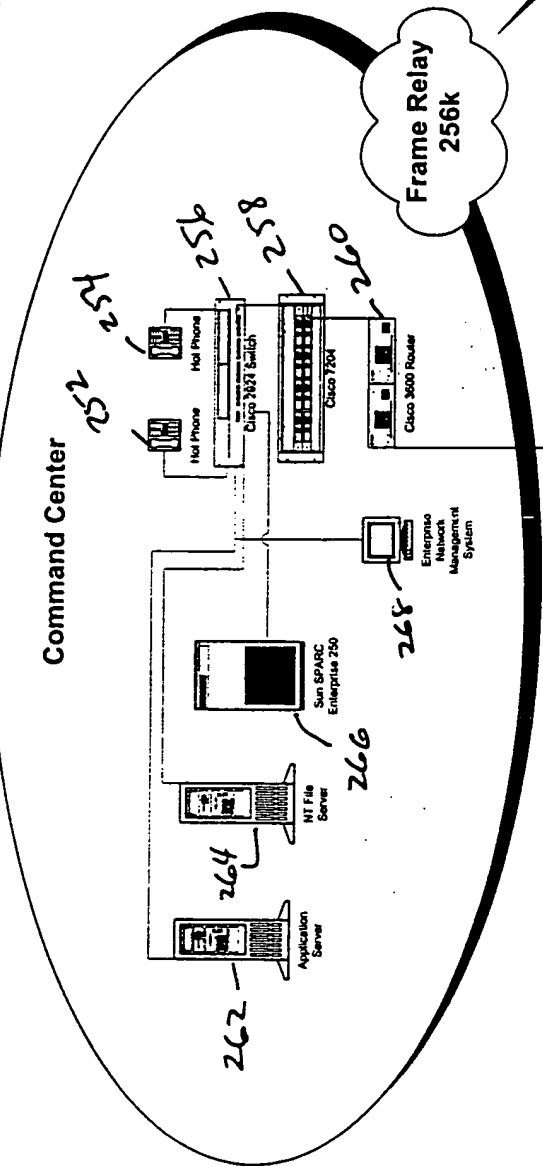


Fig. 9

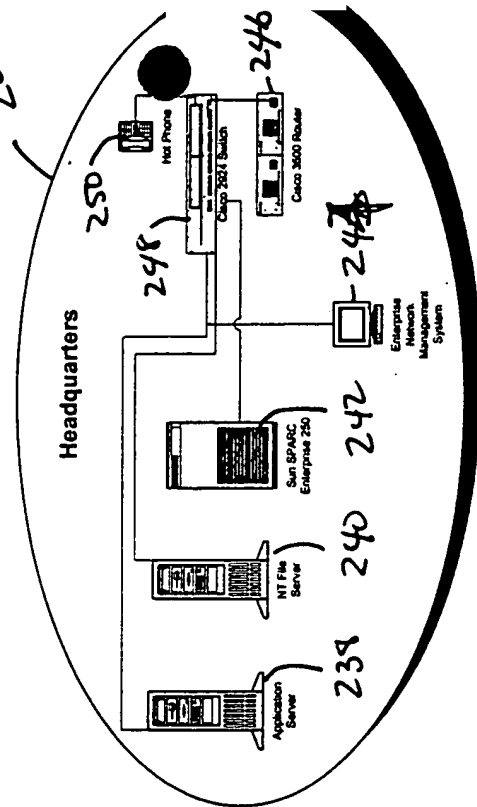
IC-USA System Architecture

Fig 10

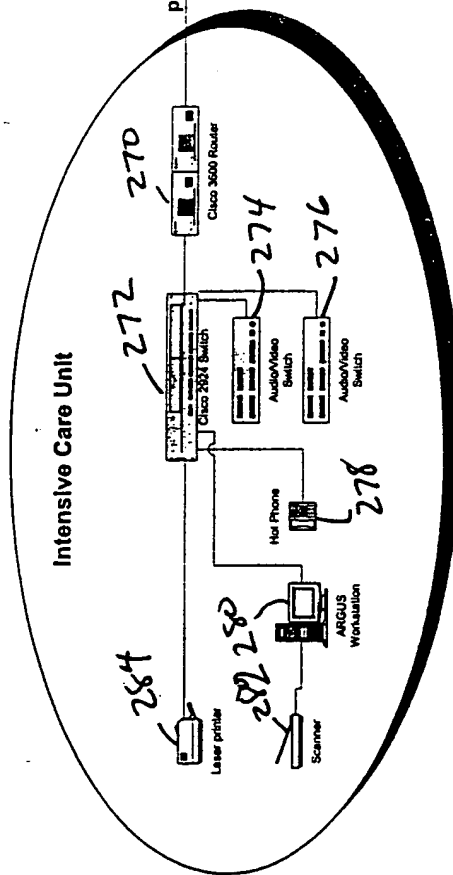
202



200



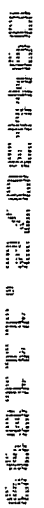
Intensive Care Unit



204

09443072-111899

Fig 11



Vital Signs Data Flow

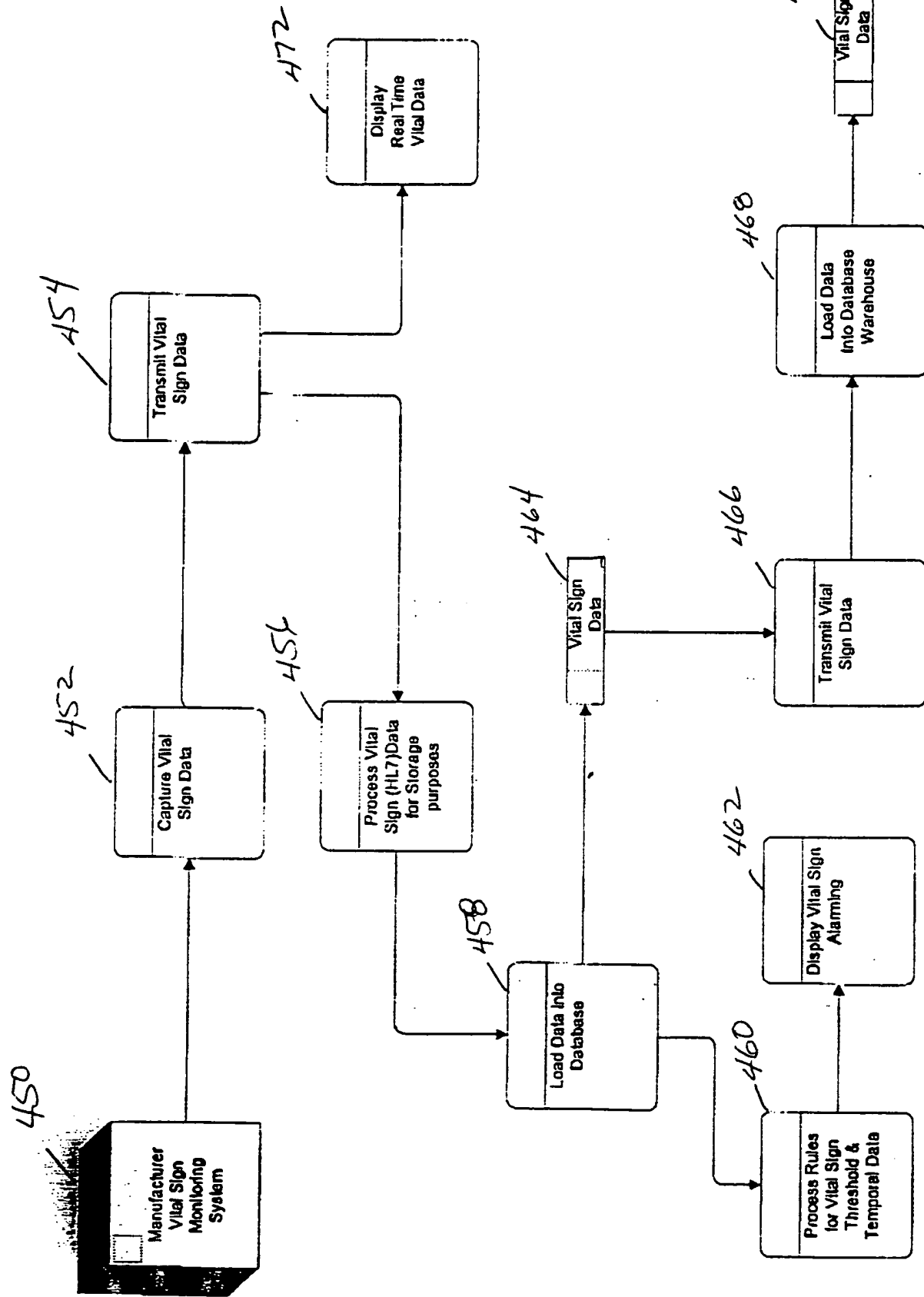


fig 12

06443072 144899

Patient Interaction Data Flow

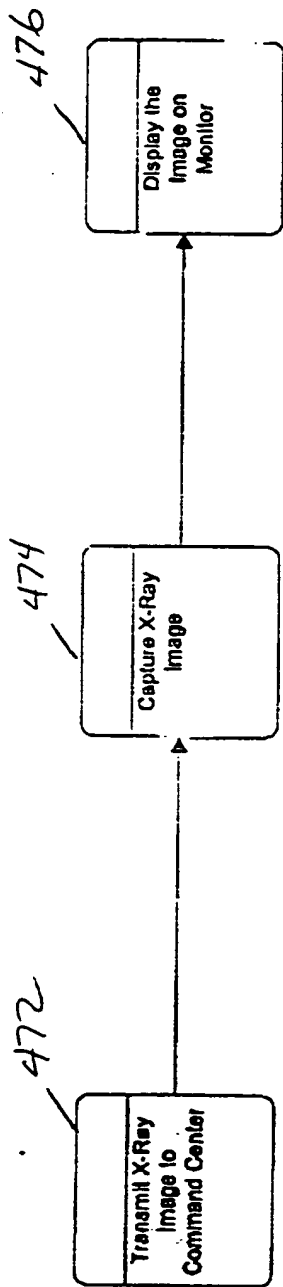


fig 13A

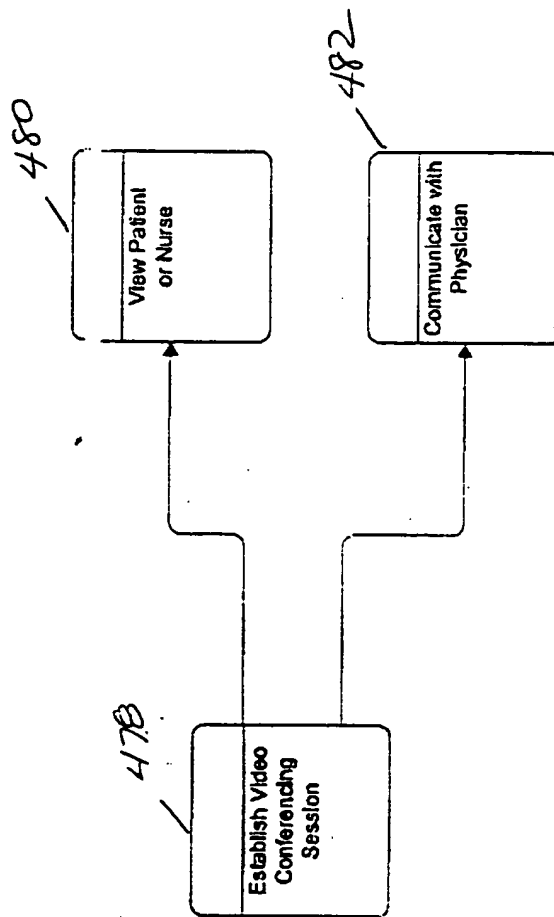
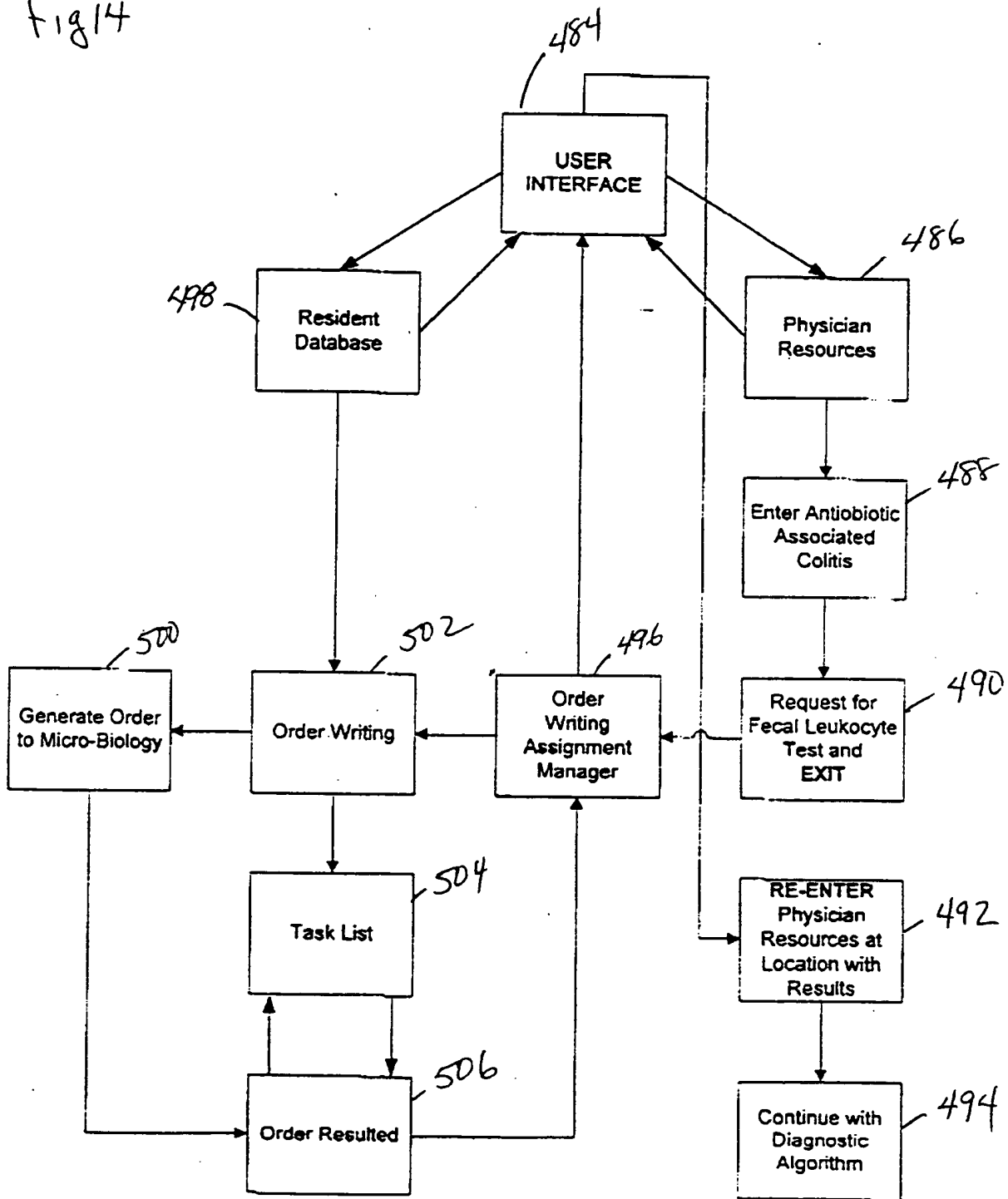


fig 13B

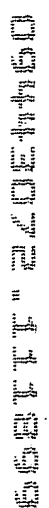
PHYSICIAN RESOURCES AND ORDER WRITING DATA INTERFACE

Fig 14



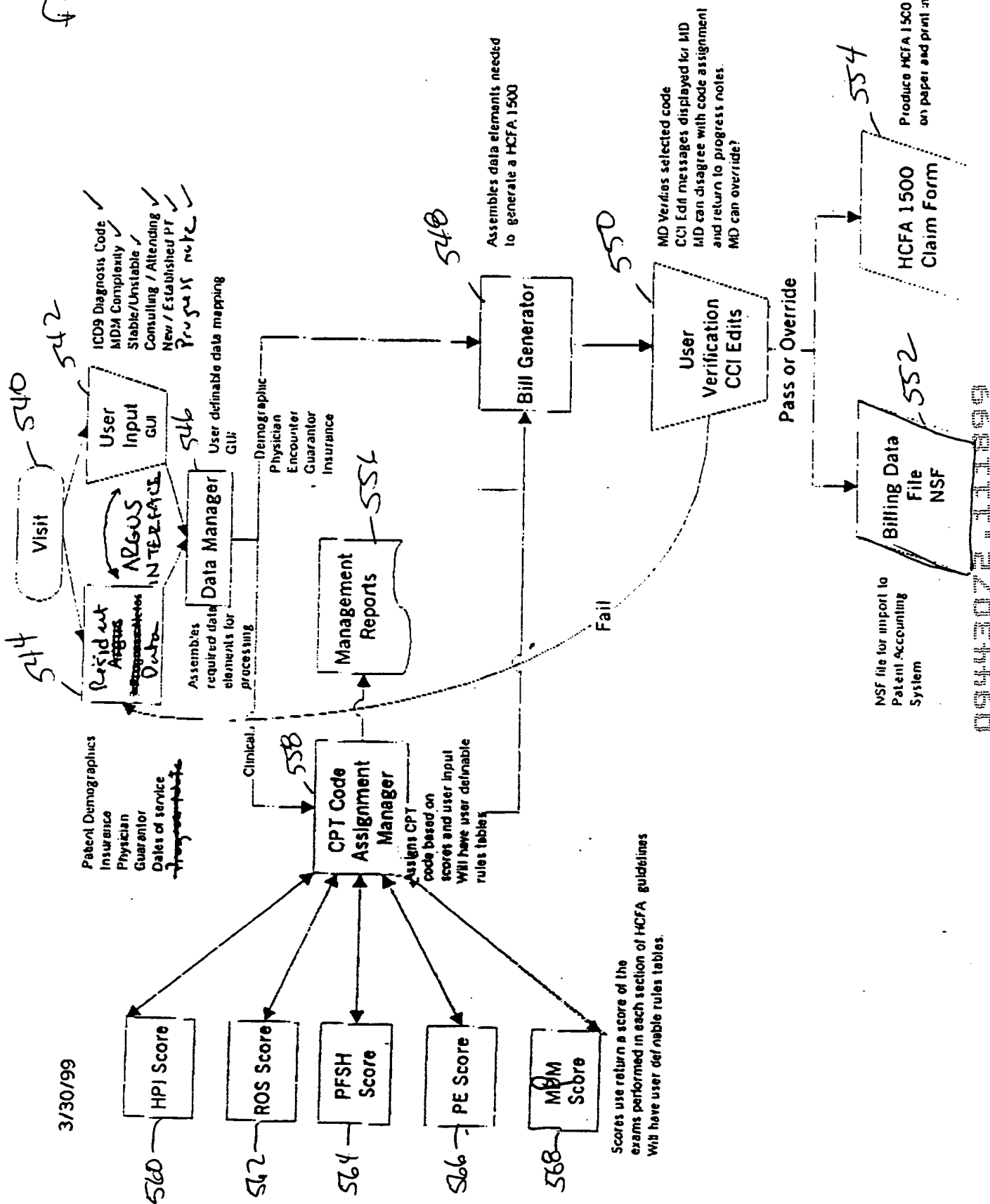
66377-220E4450

fig 15



BOOK REVIEW

12



Order Writing Flow Sheet

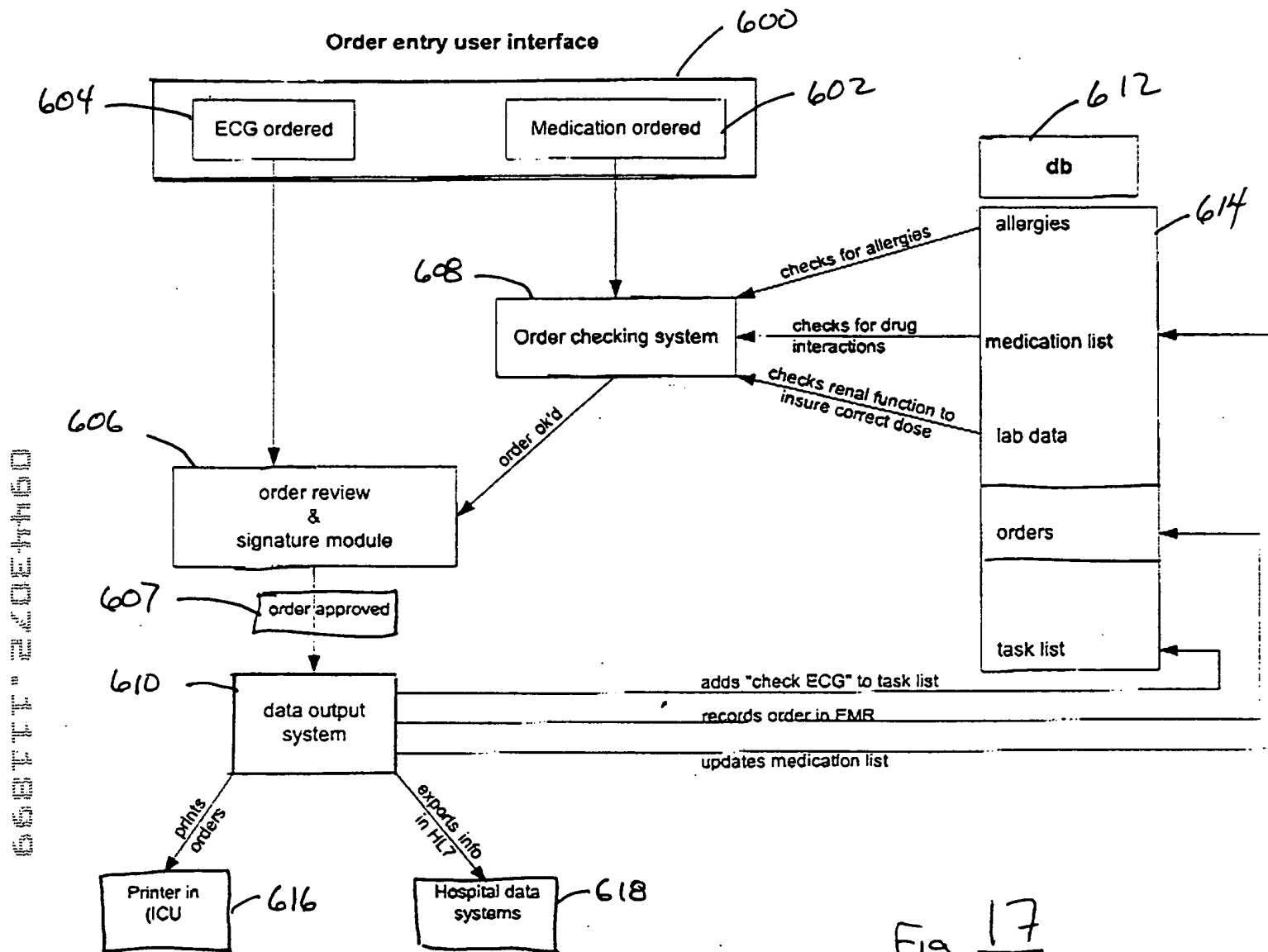


Fig 17

Event Log

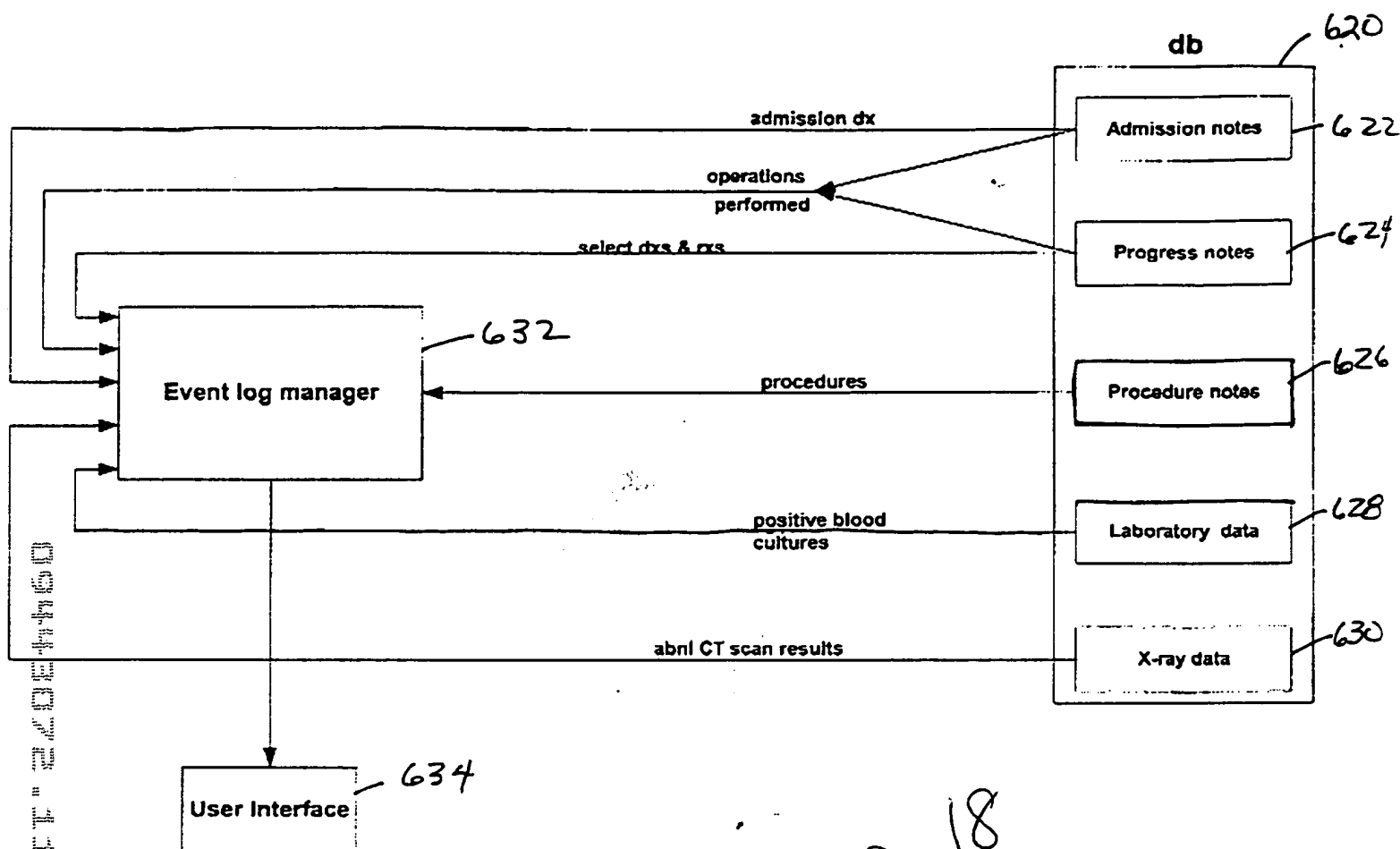
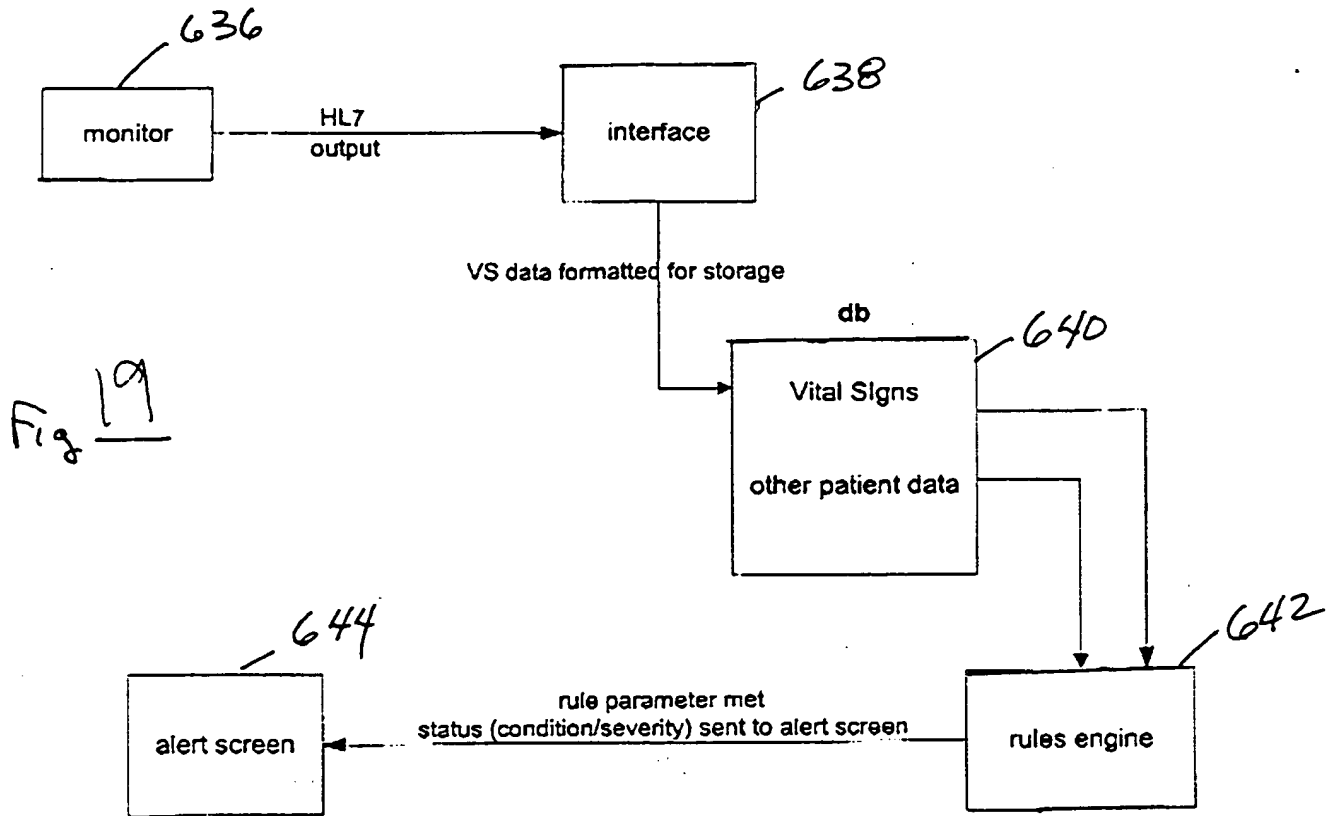


Fig 18

The event log presents in a single location key clinical information from throughout a patient's stay in the ICU. The event log provides care givers with a snapshot view of all salient events since admission. All relevant data are presented chronologically.

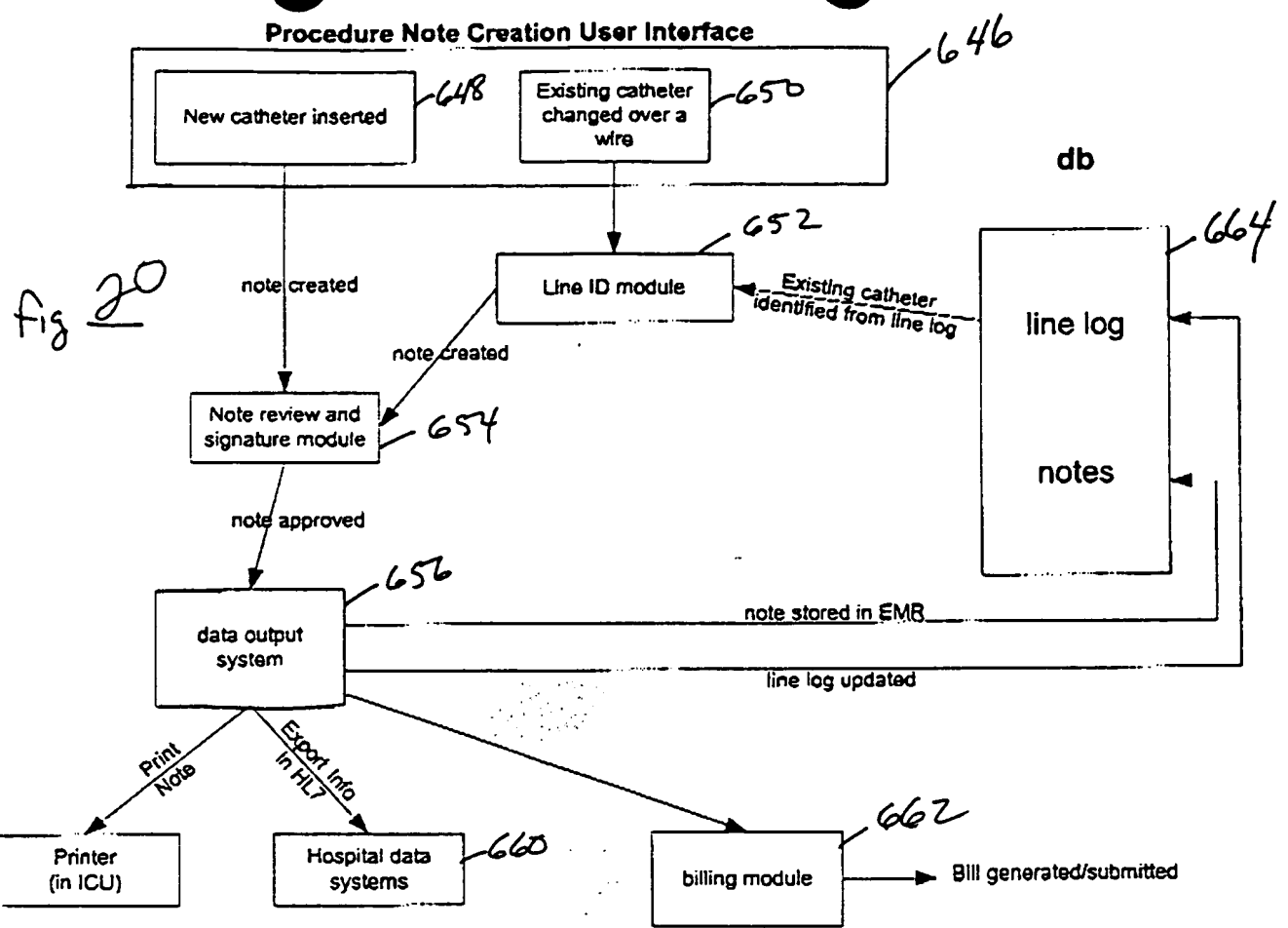
SMART ALARMS



The smart alarm system constantly monitors physiologic data (collected once a minute from the bedside monitors) and other clinical information. The rules engine searches for patterns of data indicative of clinical deterioration. Examples include changes in vital signs over time (e.g. a 25% increase in the HR and a 20% decrease in BP), parallel reductions in urine output and central venous pressure that suggest developing hypovolemia, and progressive reductions in hemoglobin concentration over time that indicate a need to exclude active bleeding (and a possible need to administer blood). When rule conditions are met, relevant information is displayed on the system "alert screen".

The rationale underlying smart alarms is to facilitate detection of impending problems and to automate problem detection. The system balances alarm sensitivity and specificity in order to maximize the benefit of the alarms to the intensivist.

Procedure Note - Line Log



The line log contains, for each patient, relevant information about all indwelling catheters, including type and location of catheter, insertion date, the most recent date that the catheter was changed over a wire, and the date the catheter was removed. This information helps clinicians evaluate the likelihood that a given catheter is infected and guides management.

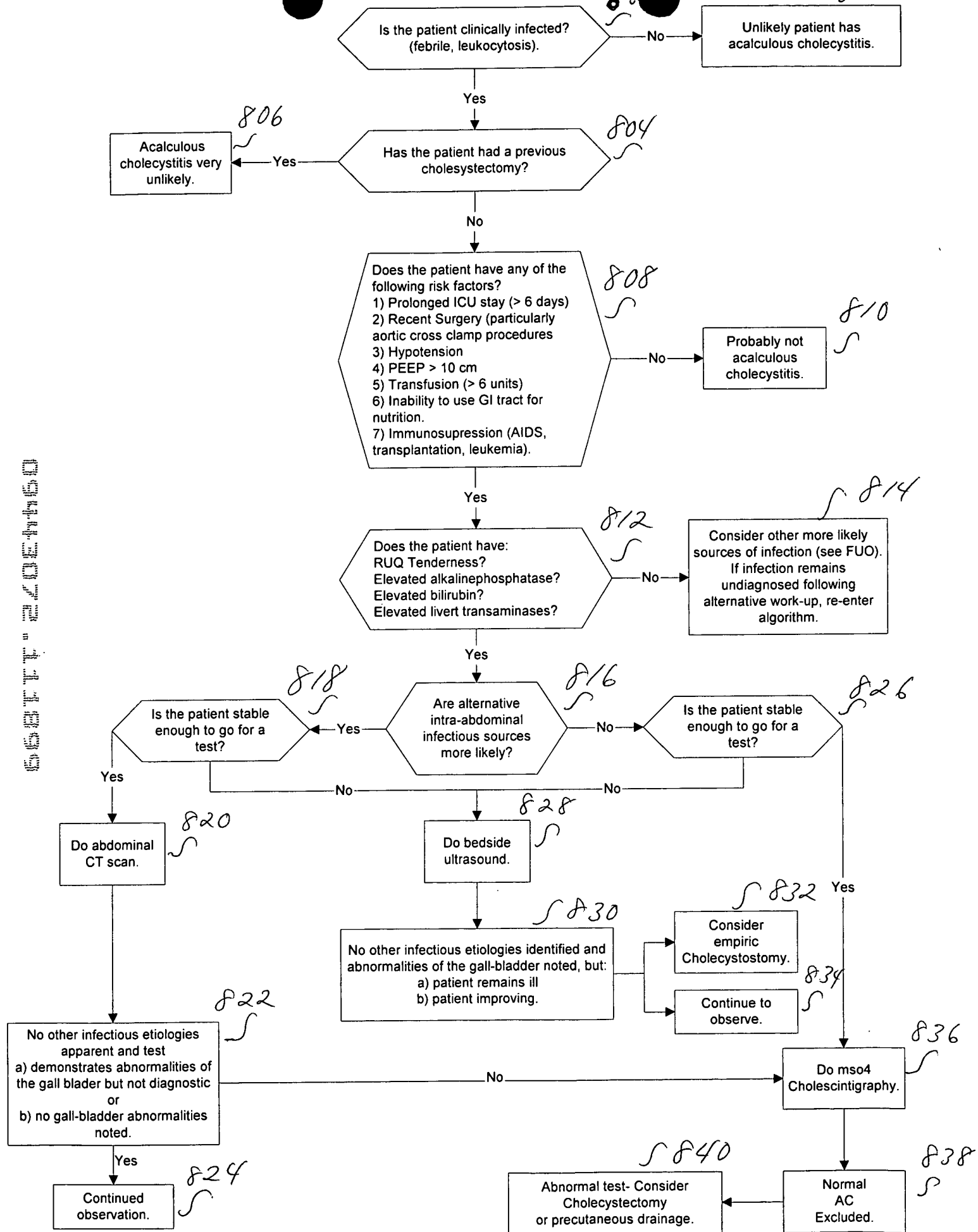


Figure 22

900

Adrenal insufficiency

902

Is the patient hypotensive (systolic <90 mmhg) and/or been on pressors for ≥ 48 hours?

no

Adrenal insufficiency unlikely

yes

904

Is there an obvious cause for the hypotension and/or pressor need?

- Hypovolemia
- Myocardial Dysfunction
- Spinal injury

yes

no

Treat underlying cause first; If cause reversed and hypotension / pressor need persists

908

1.
Has patient been treated with steroids within the last 6 months for ≥ 2 weeks?

910

2.
Does the patient have
1) Hyponatremia ($\text{Na} < 130 \text{ mmol/L}$) and
2) Hyperkalemia ($>5 \text{ mmol/L}$)

916

Results of Cosyntropin Stim test

1) What was the baseline cortisol level?(prior to cosyntropin) _____ mcg/dl?
2) What was the cortisol level 30 minutes following cosyntropin stimulation? _____ mcg/dl?

914

Administer cosyntropin 250 mcg IV

918

Treatment Action

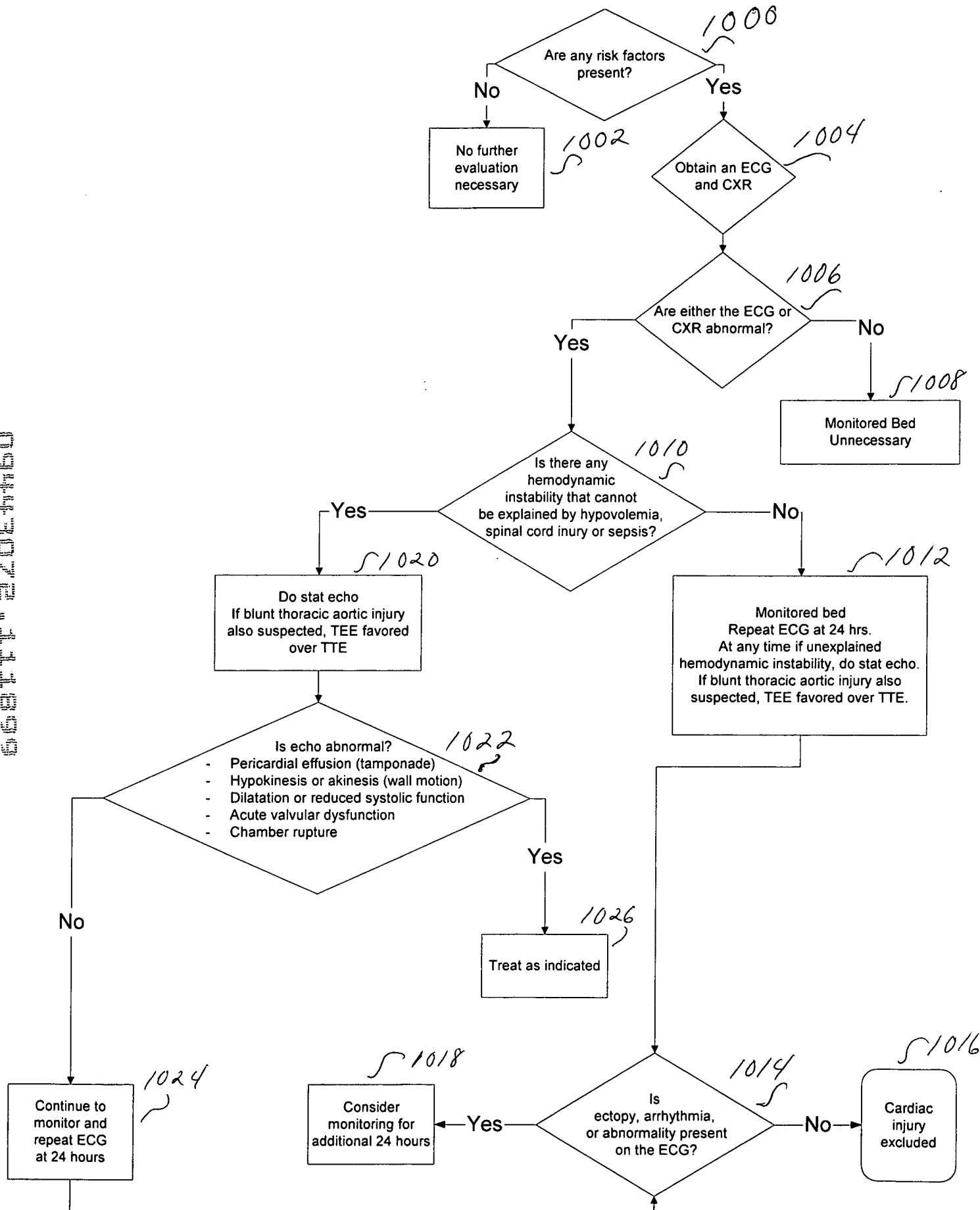
912

3.
Was the patient anticoagulated or coagulopathic prior to developing hypotension / pressor needs?

Blunt Cardiac Injury

Figure 23

658117 2404150



CANDIDURIA

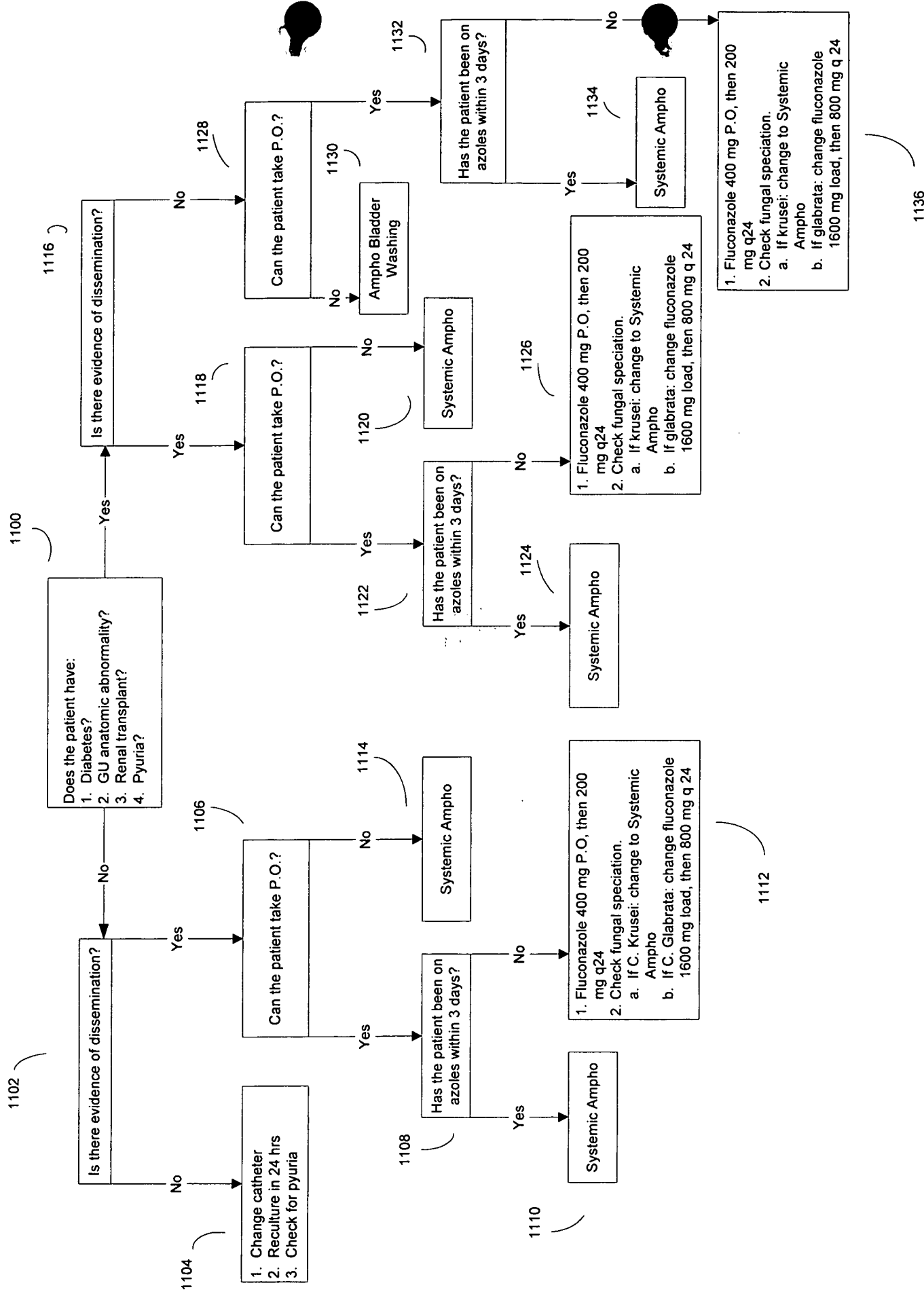
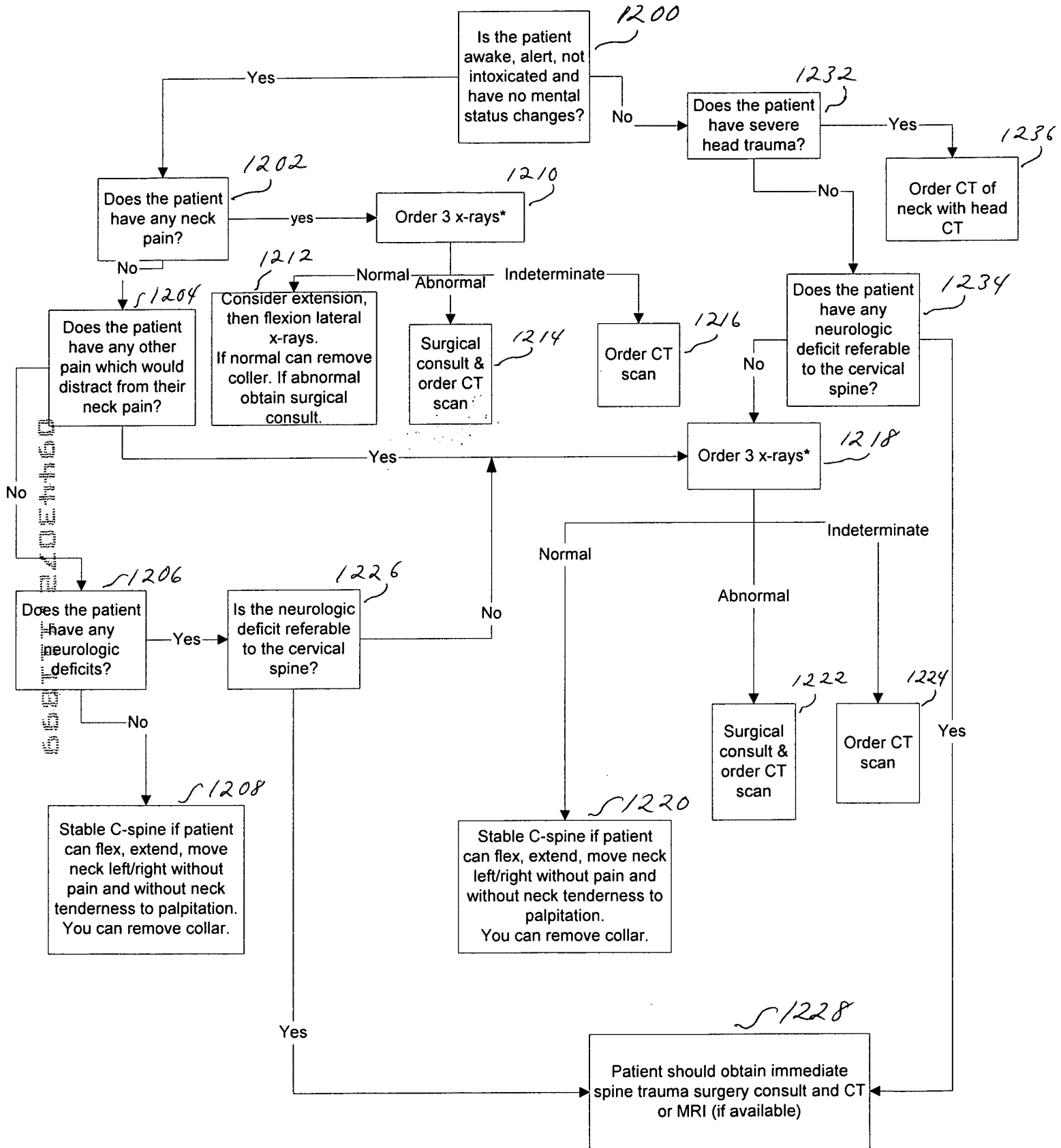


Figure 24.1.1.33

Cervical Spine Injury

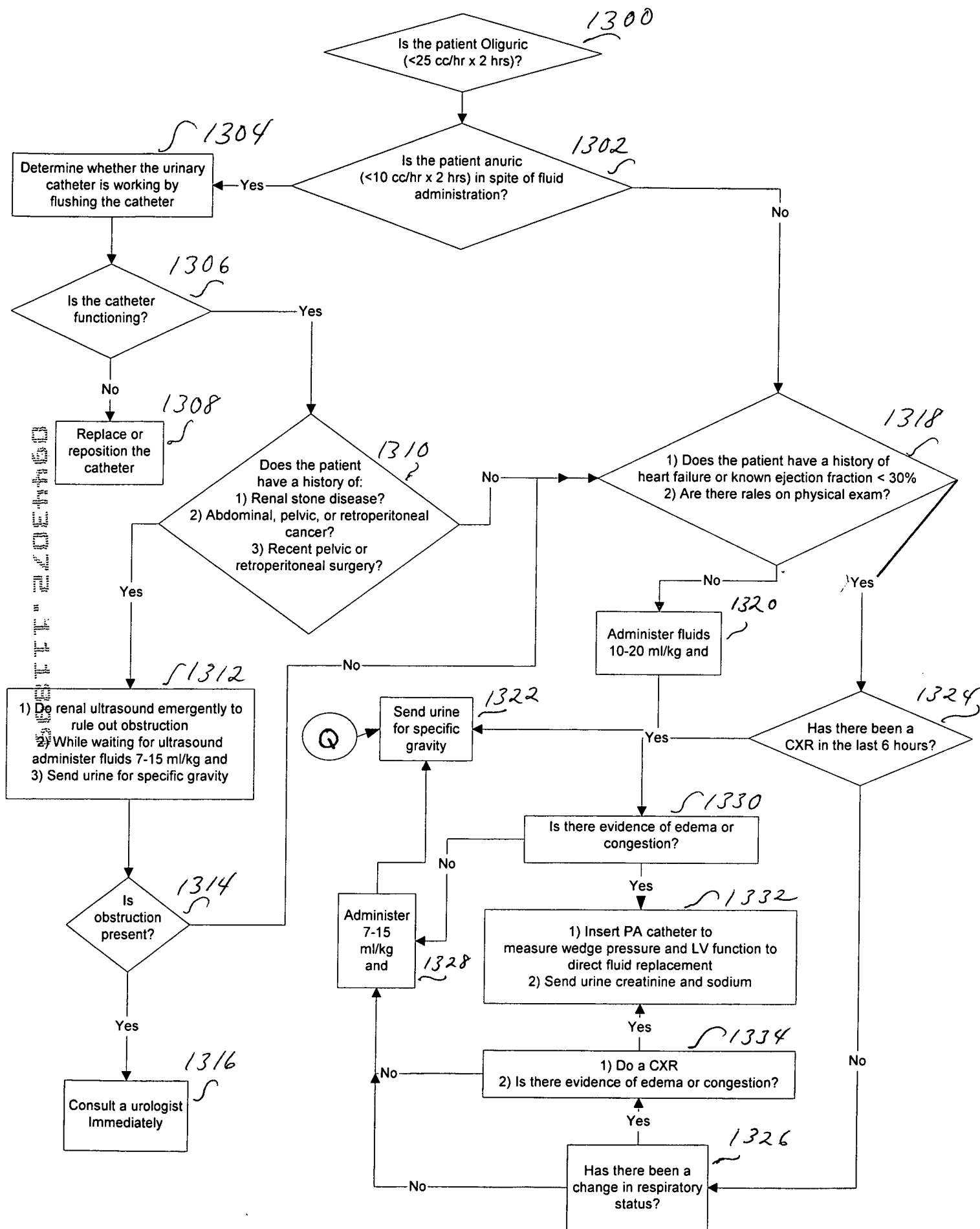
Figure 25



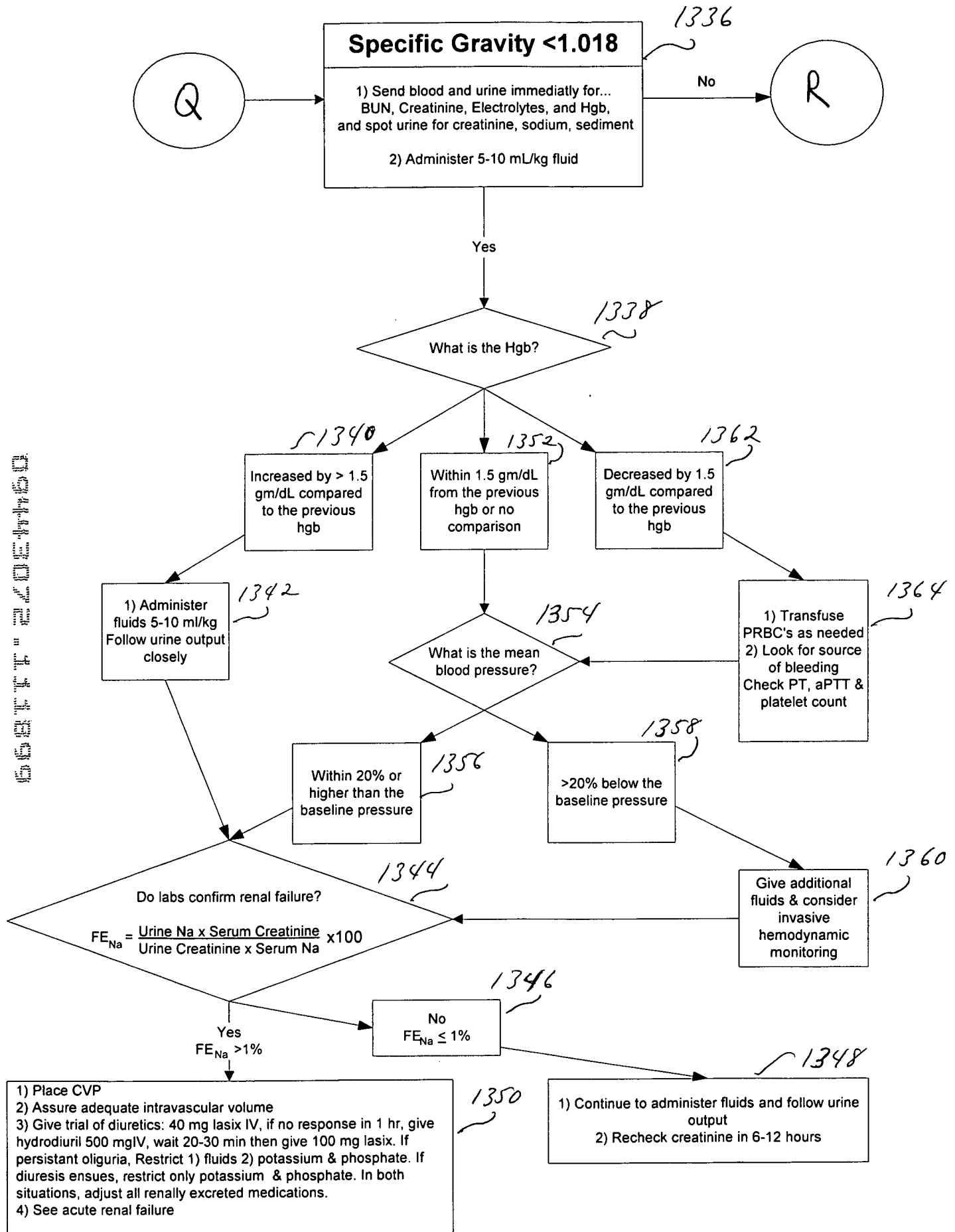
* 1) Lateral view revealing the base of the occiput to the upper border of the first thoracic vertebra, 2) anteroposterior view revealing spinous processes of the second cervical through the first thoracic vertebra, and 3) an open mouth odontoid view revealing the lateral masses of the first cervical vertebra and entire odontoid process.

Oliguria (page 1)

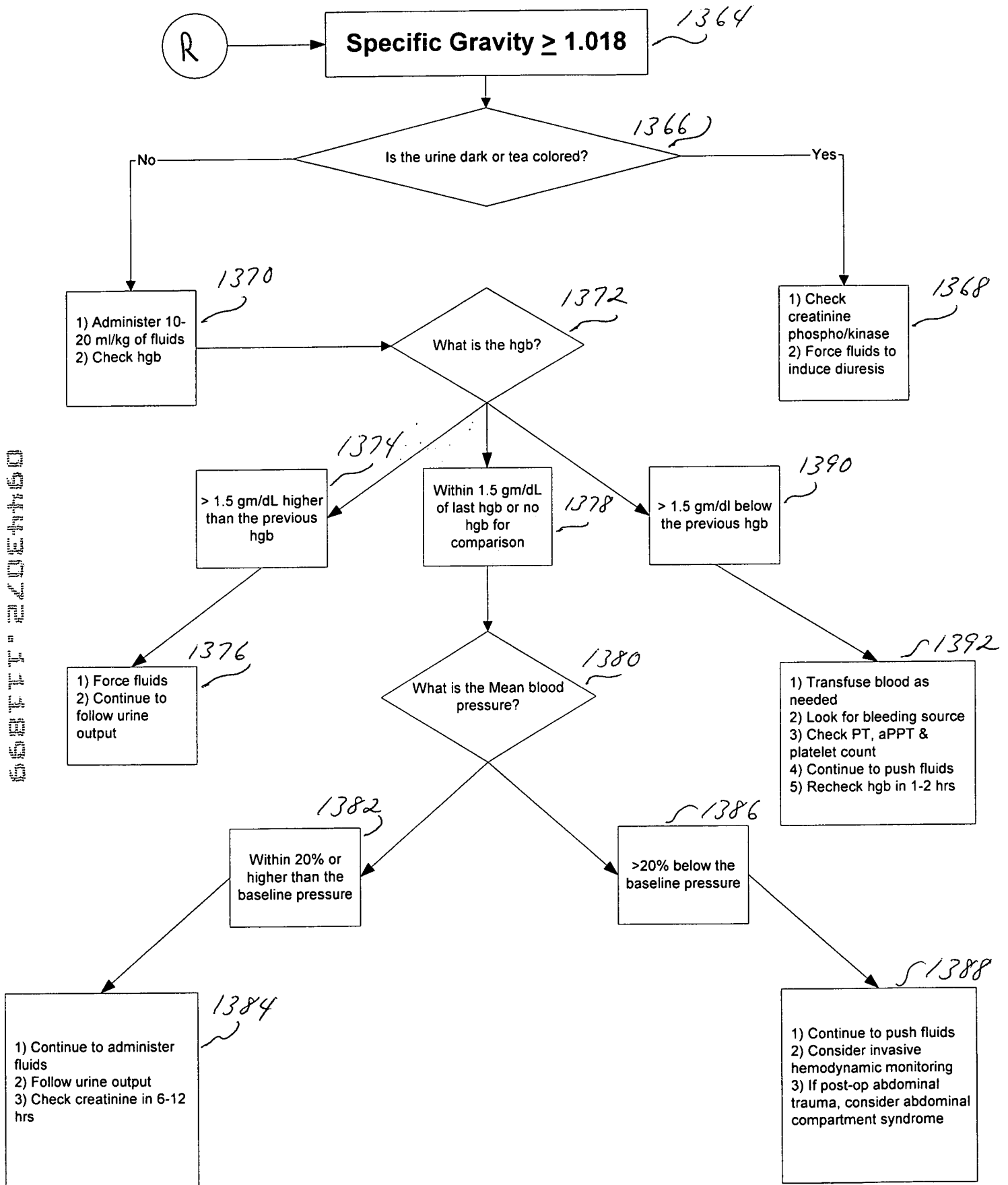
Figure 26



Oliguria (page 2)

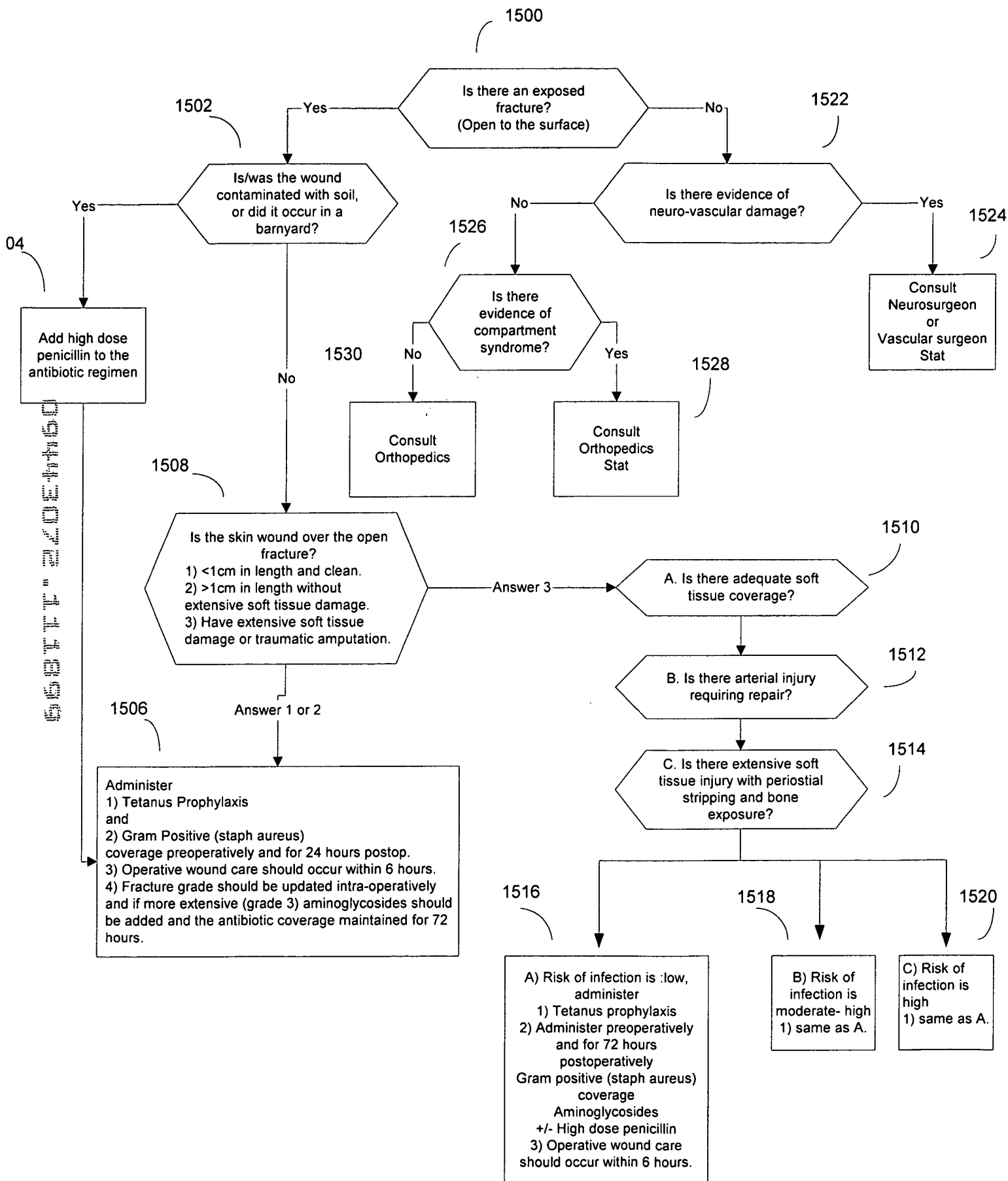


Oliguria (page 3)



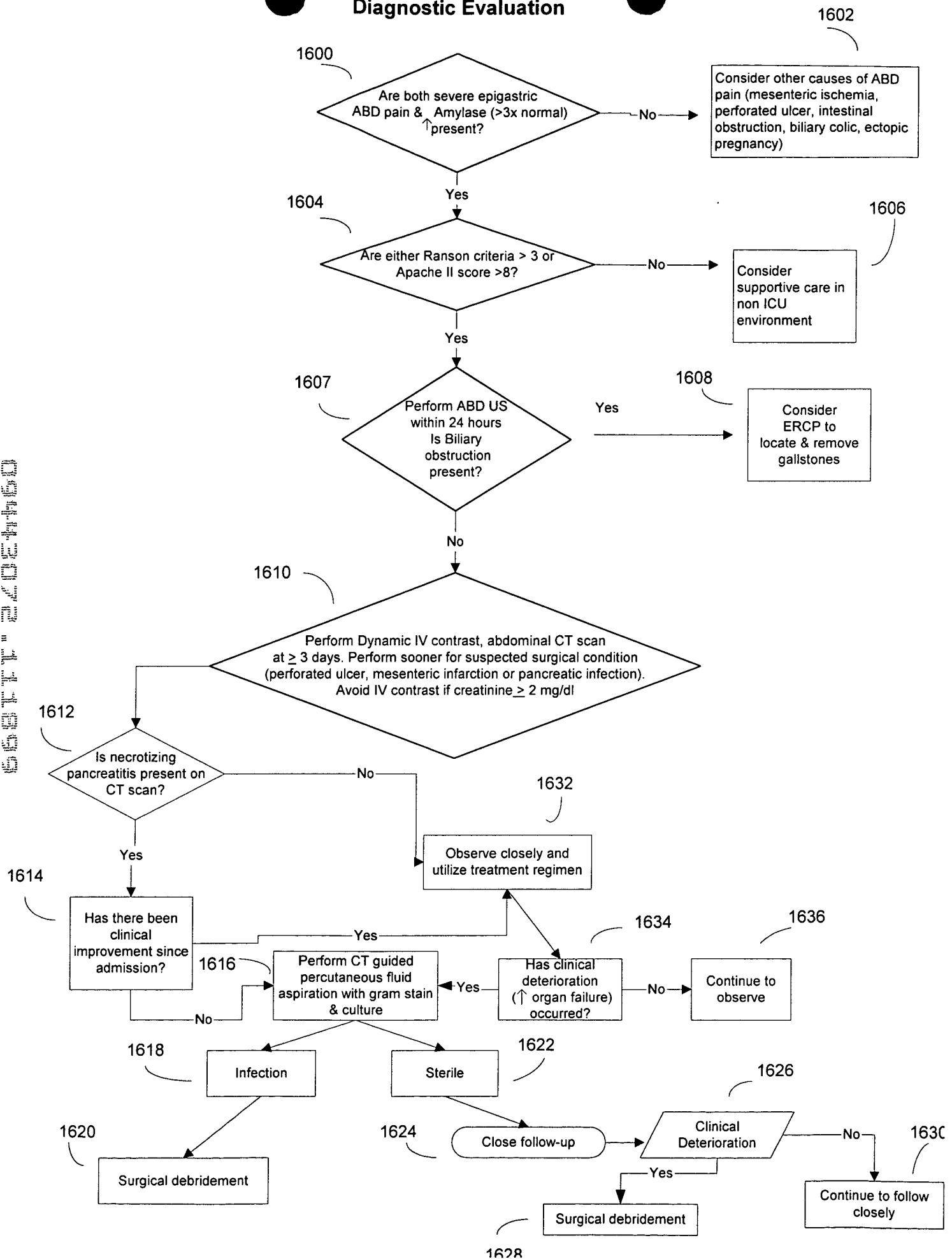
OPEN FRACTURES

Figure 27



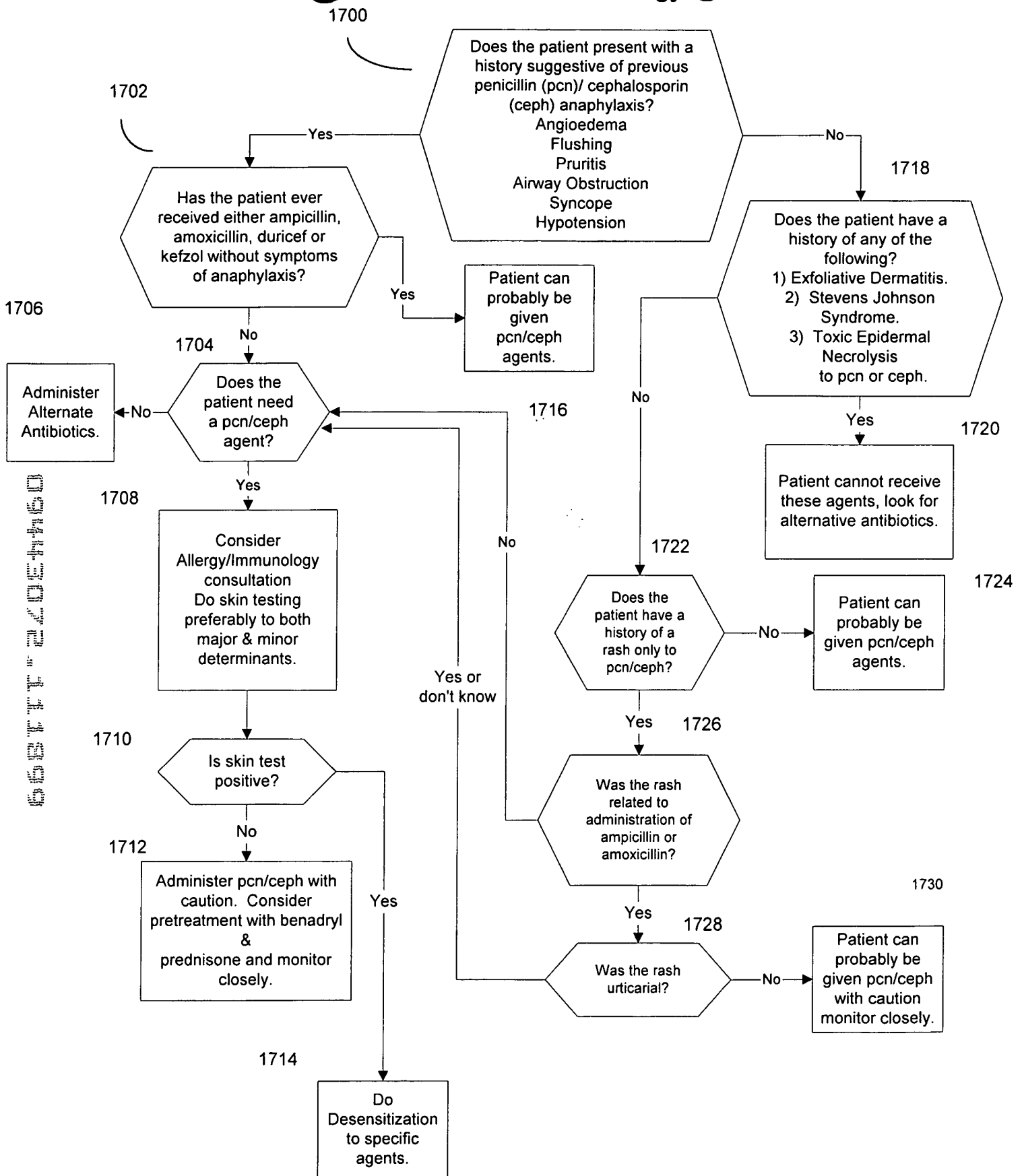
PANCREATITIS Diagnostic Evaluation

09443072 11899



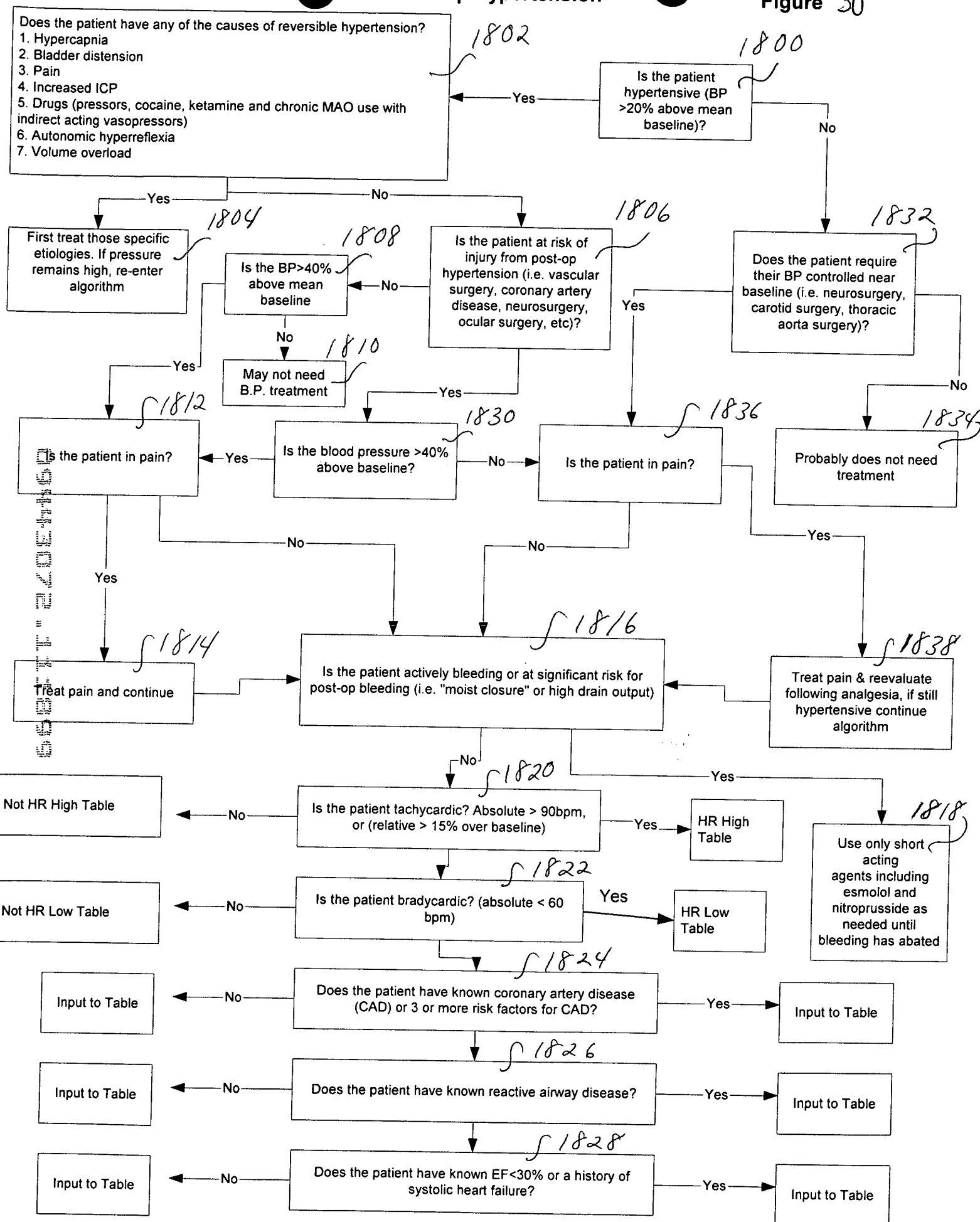
Penicillin Allergy

Figure 29



Post-Op Hypertension

Figure 30



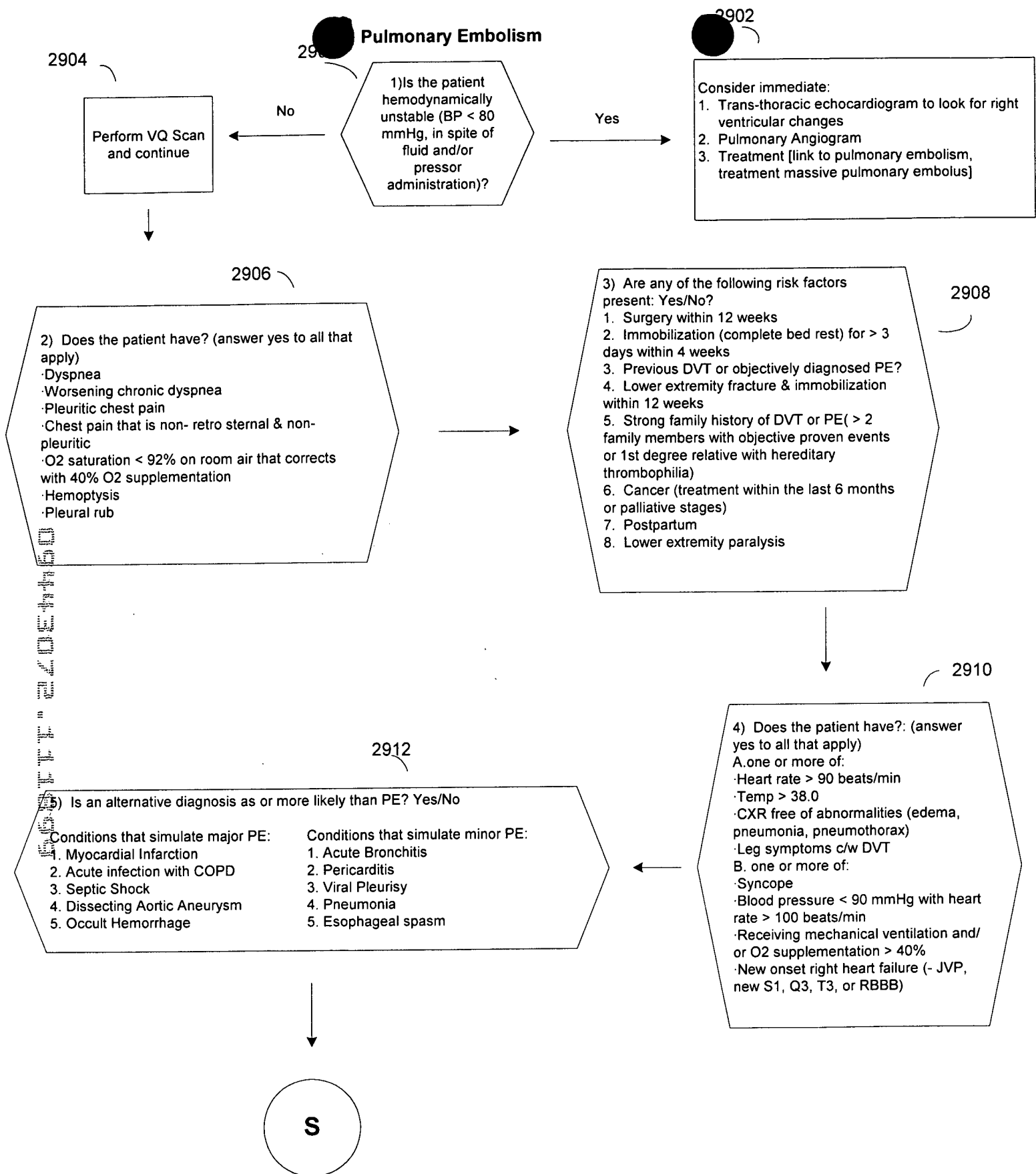


Figure 31

Pulmonary Embolism

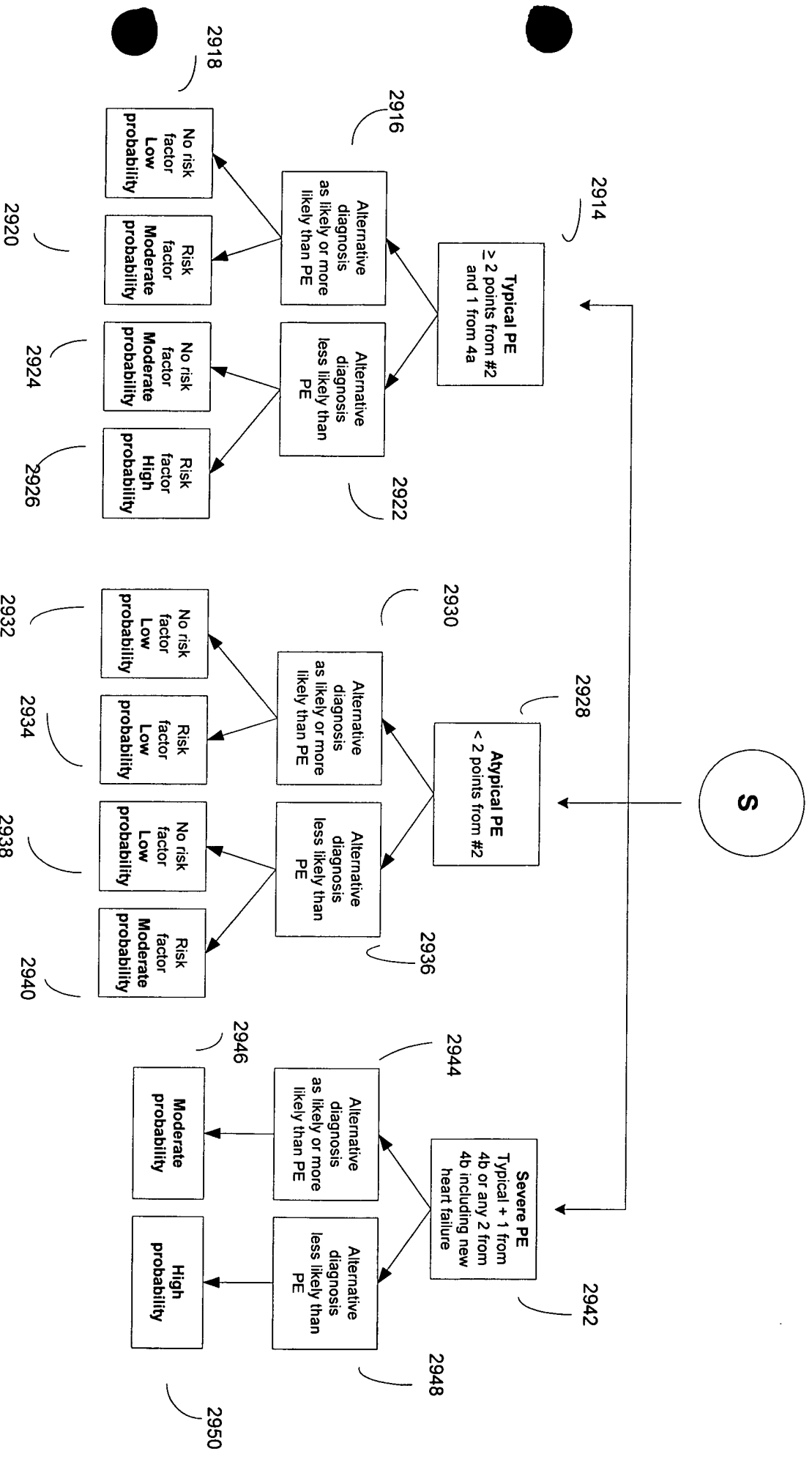


Figure 31A

009443072011.1.2009

Seizure Algorithm

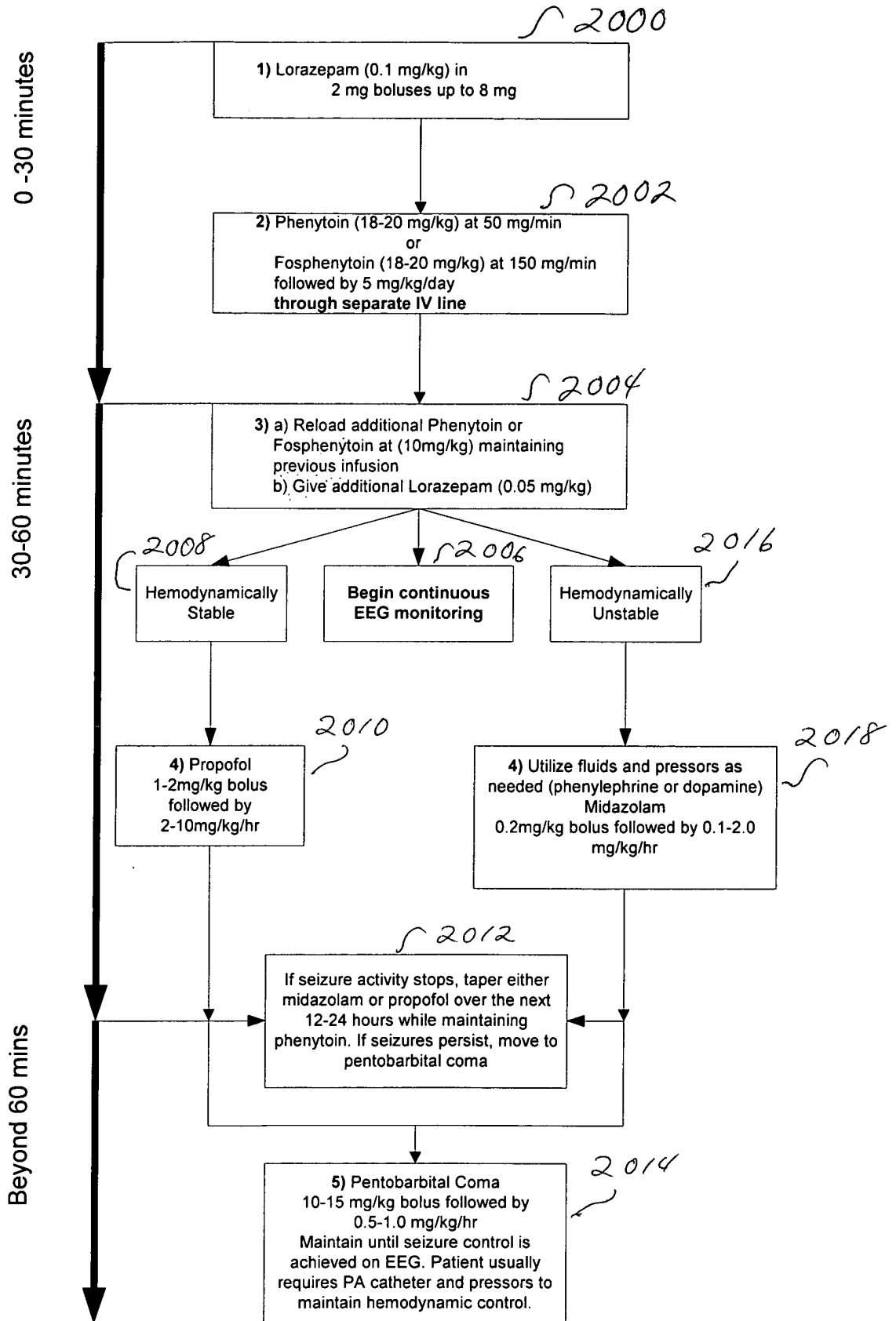


Figure 32

\\Viper\dds*. *ventricular arrhythmia\SVT

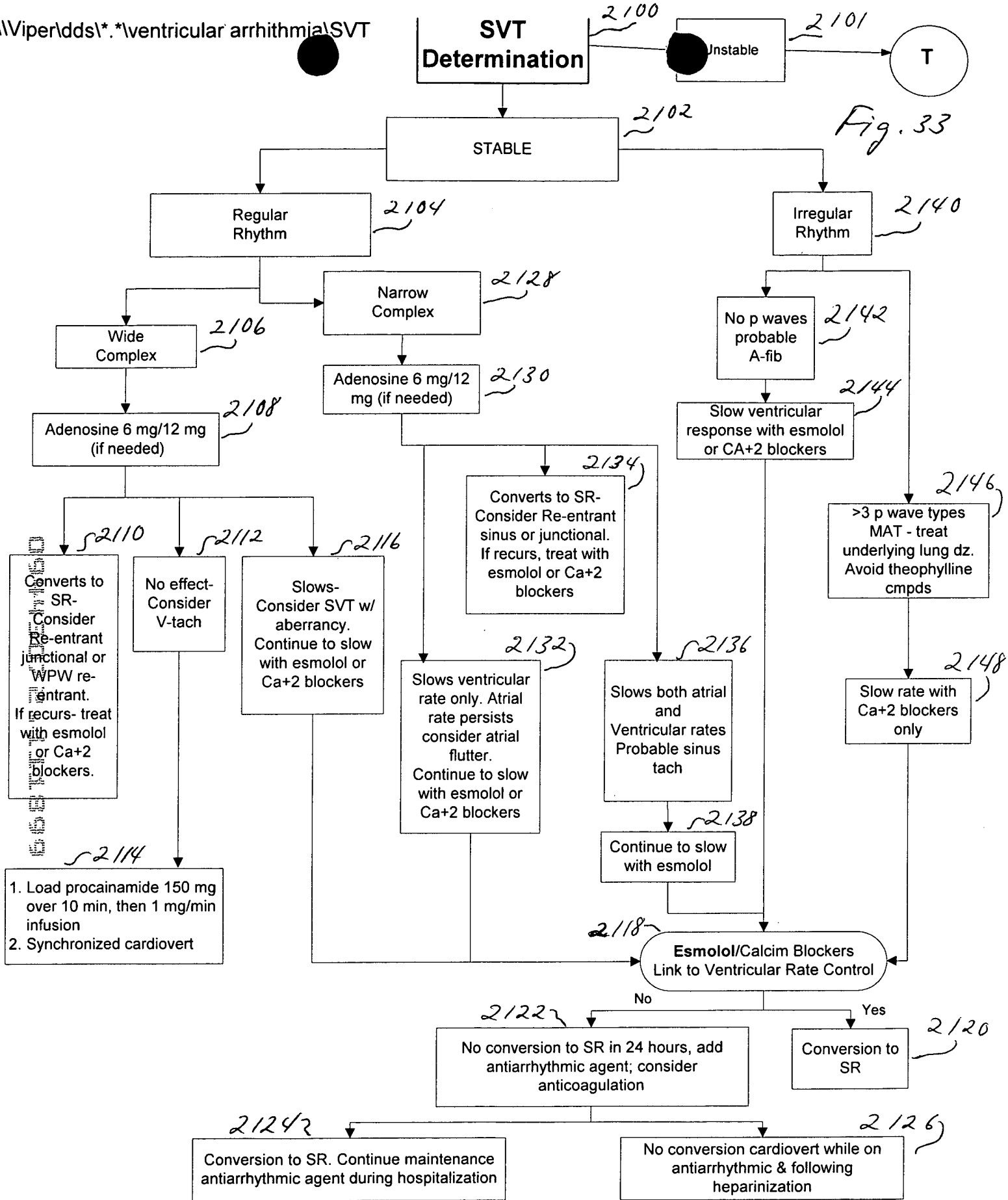
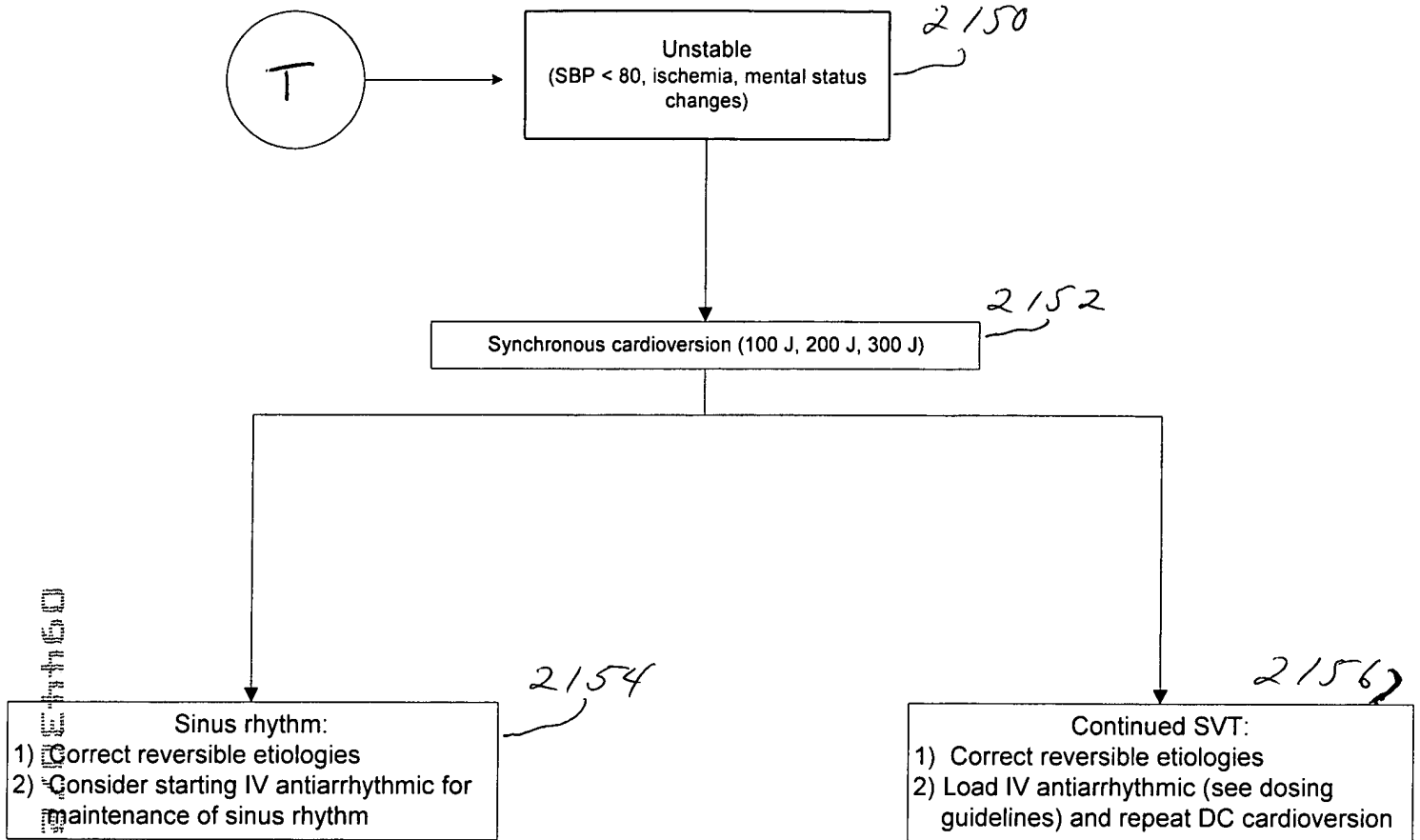


Figure 33

Fig 33A

SVT Unstable



Wide Complex QRS Tachycardia

Fig. 34

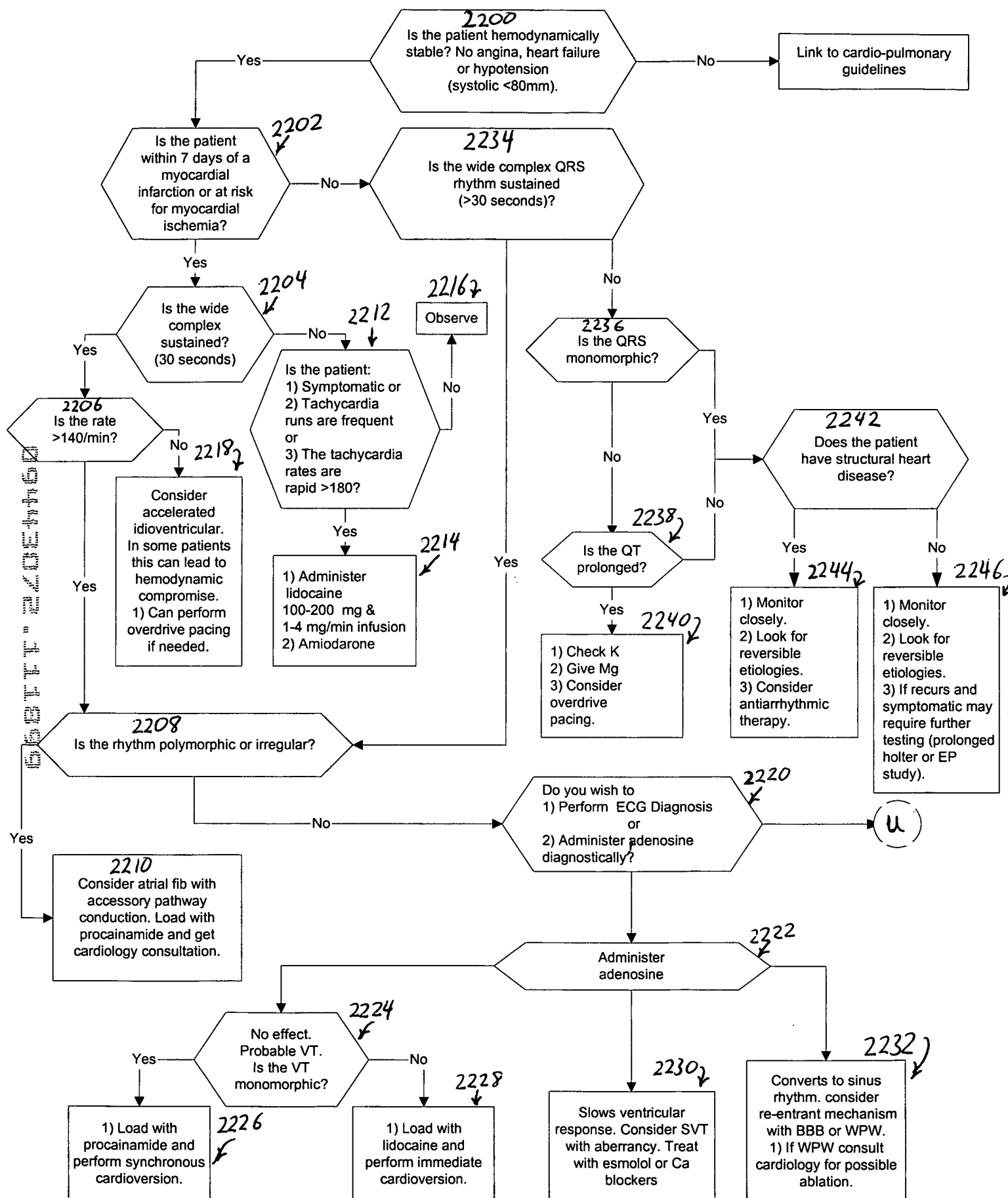


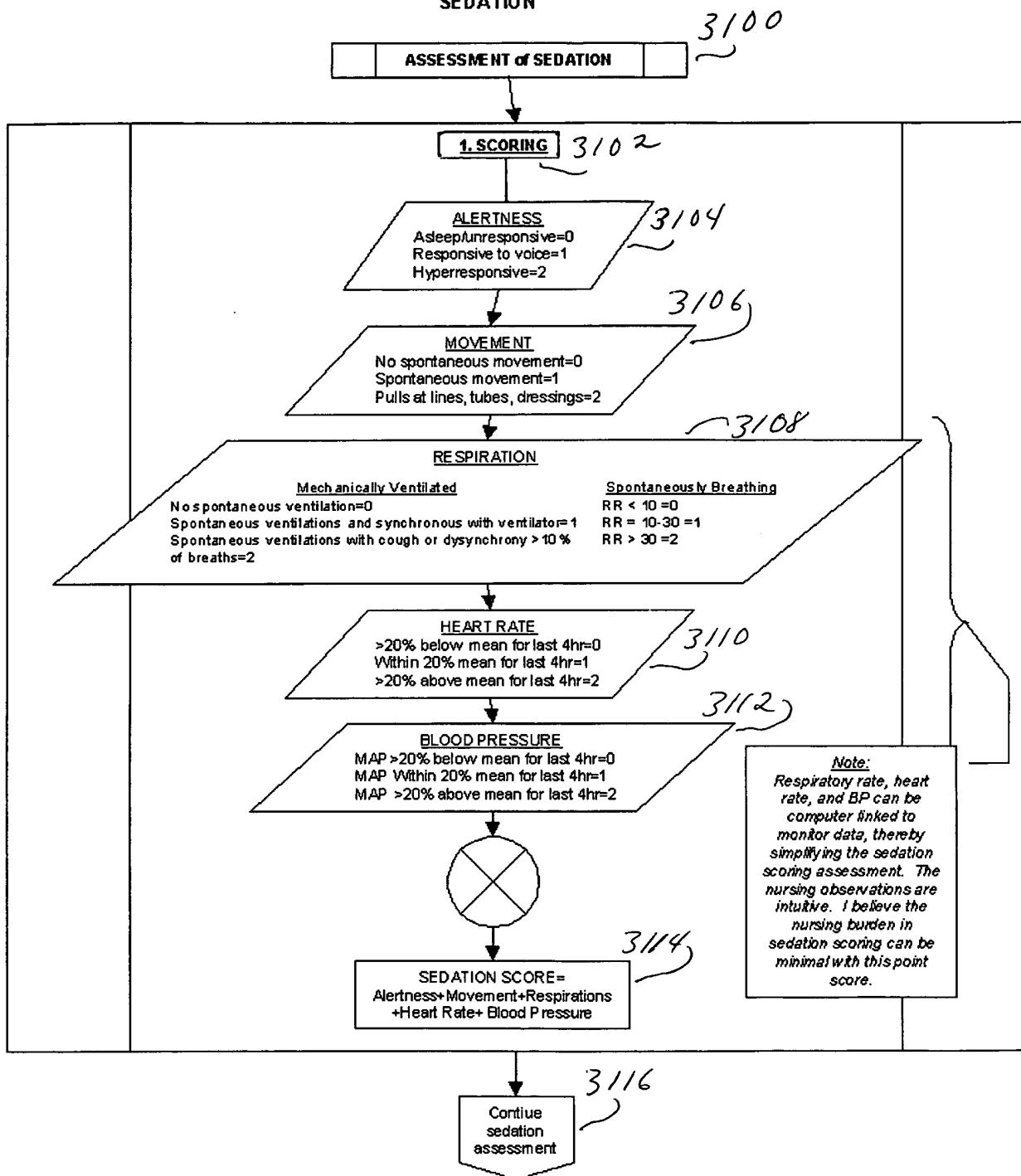
Fig. 34A

**Wide Complex QRS Tachycardia
(page 2)
ECG Diagnosis**



Fig. 41

SEDATION



09443072 11399

Figure 41A

3118

OR

OR

OR

OR

OR

OR

OR

OR

OR

treat

3120



Fig. 42

3200 ✓
Bolus sliding scale
midazolam



3202 ✓

If lorazepam <0-2 mg IV q 6hr then give midazolam 1-2 mg q 5min until adequately sedated
If lorazepam =2-4 mg IV q 4hr then give midazolam 2 mg q 5min until adequately sedated
If lorazepam =5-10 mg IV q 4hr then give midazolam 2-5 mg q 5min until adequately sedated
If lorazepam >10 mg IV q 4hr then give midazolam 5 mg q 5min until adequately sedated AND
consider fentanyl and/or droperidol or Haldol for synergy despite delirium and pain assessment

09443072-1189
66811-204460

Figure 43

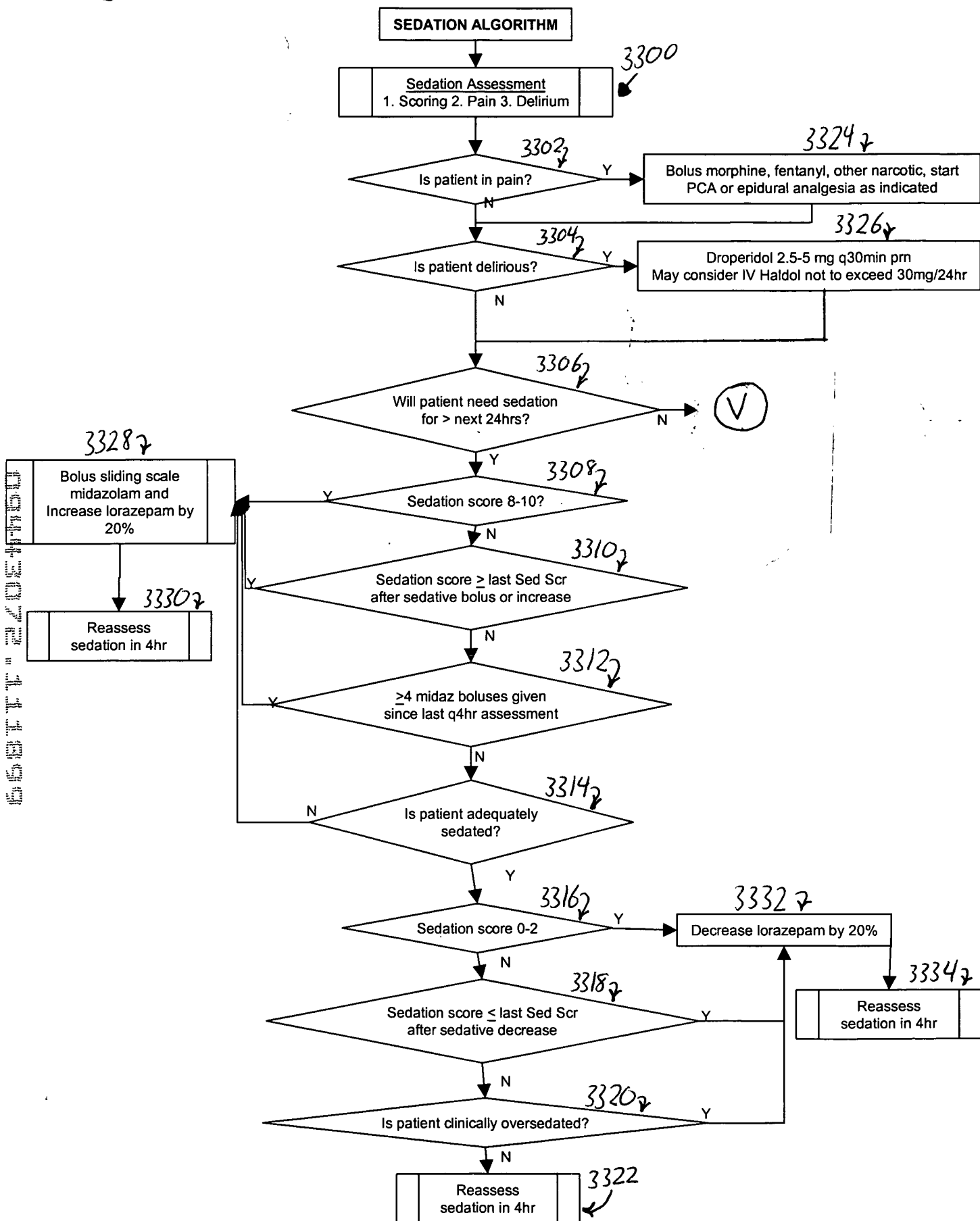
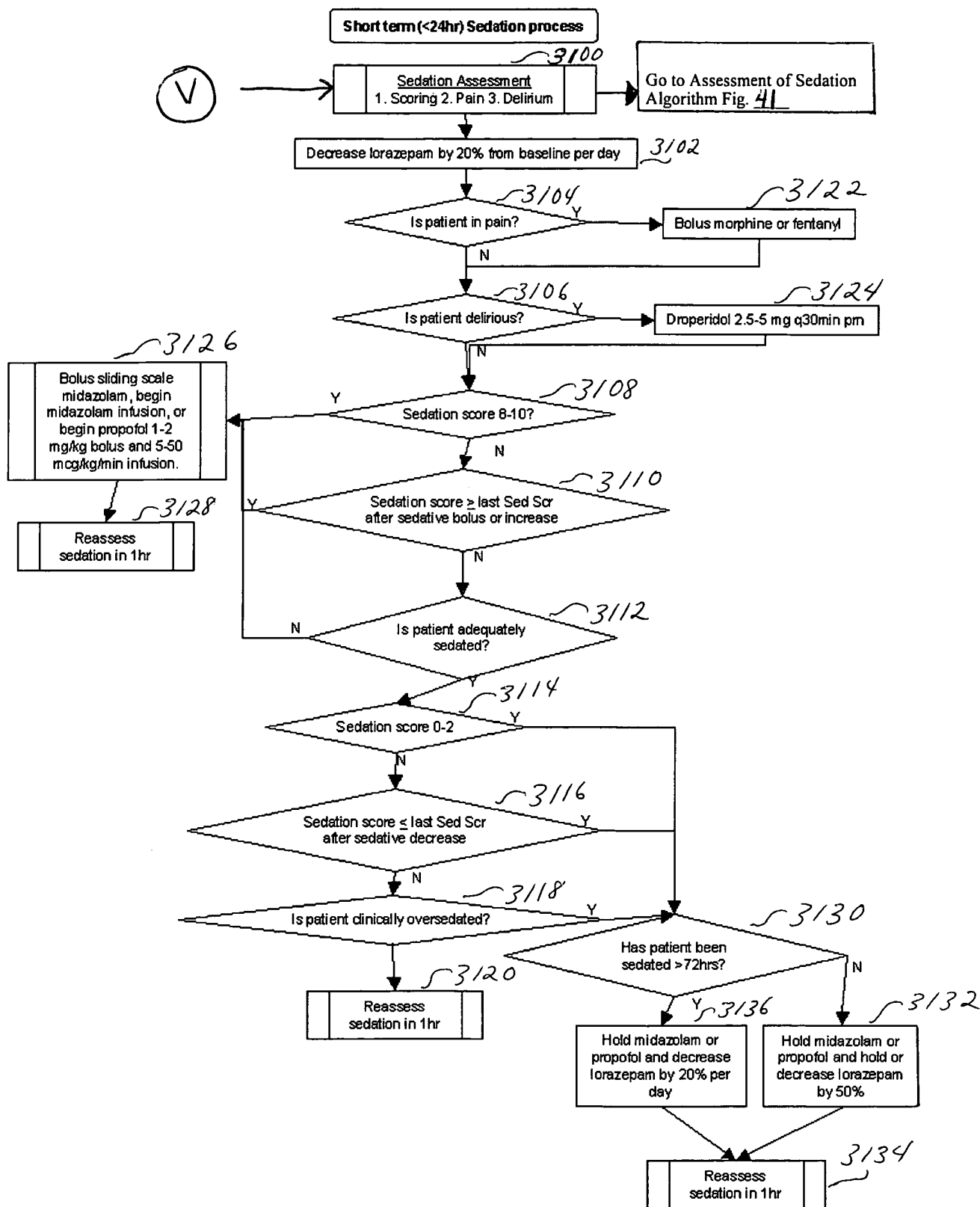


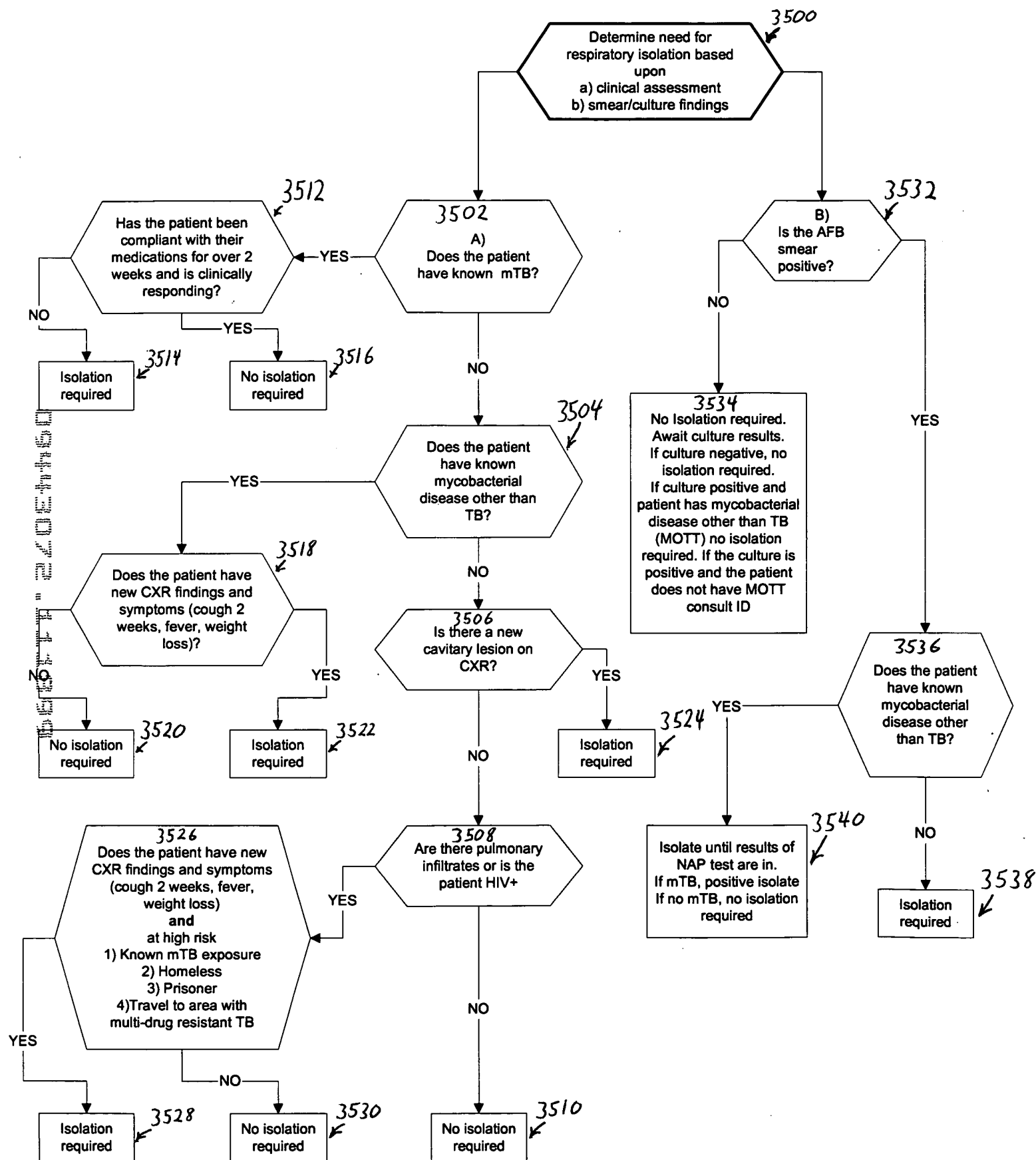
Figure 44



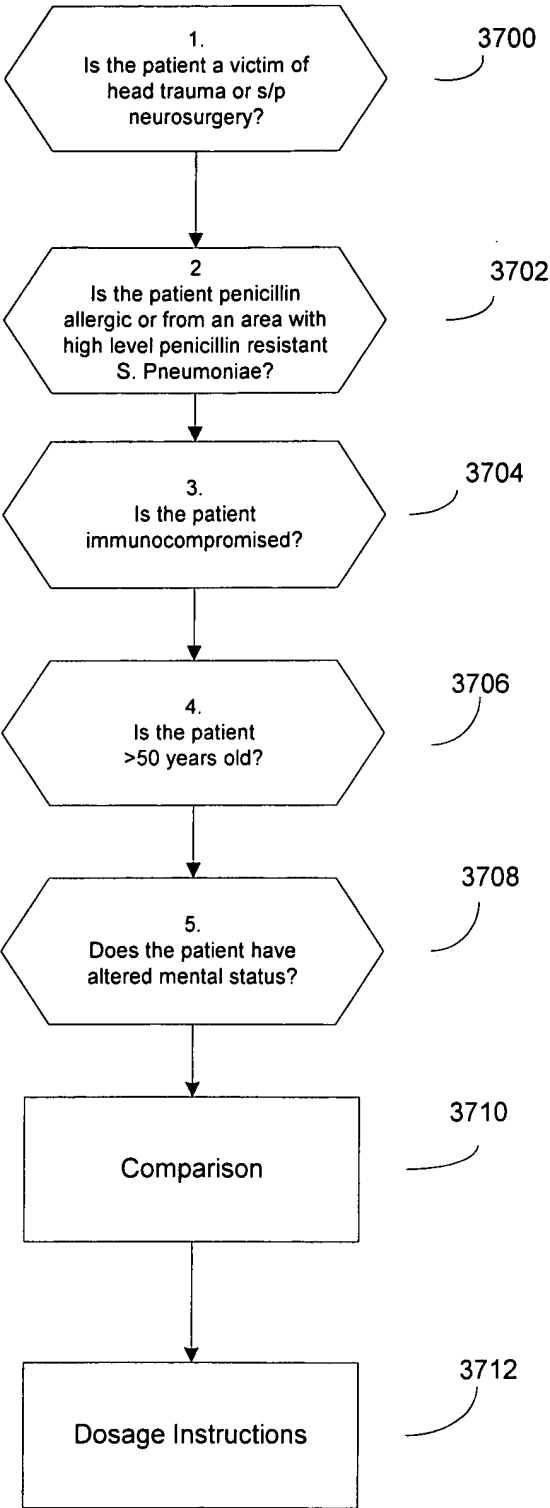
034430244399

Respiratory Isolation

Fig. 45



**Empiric
Meningitis
Treatment**



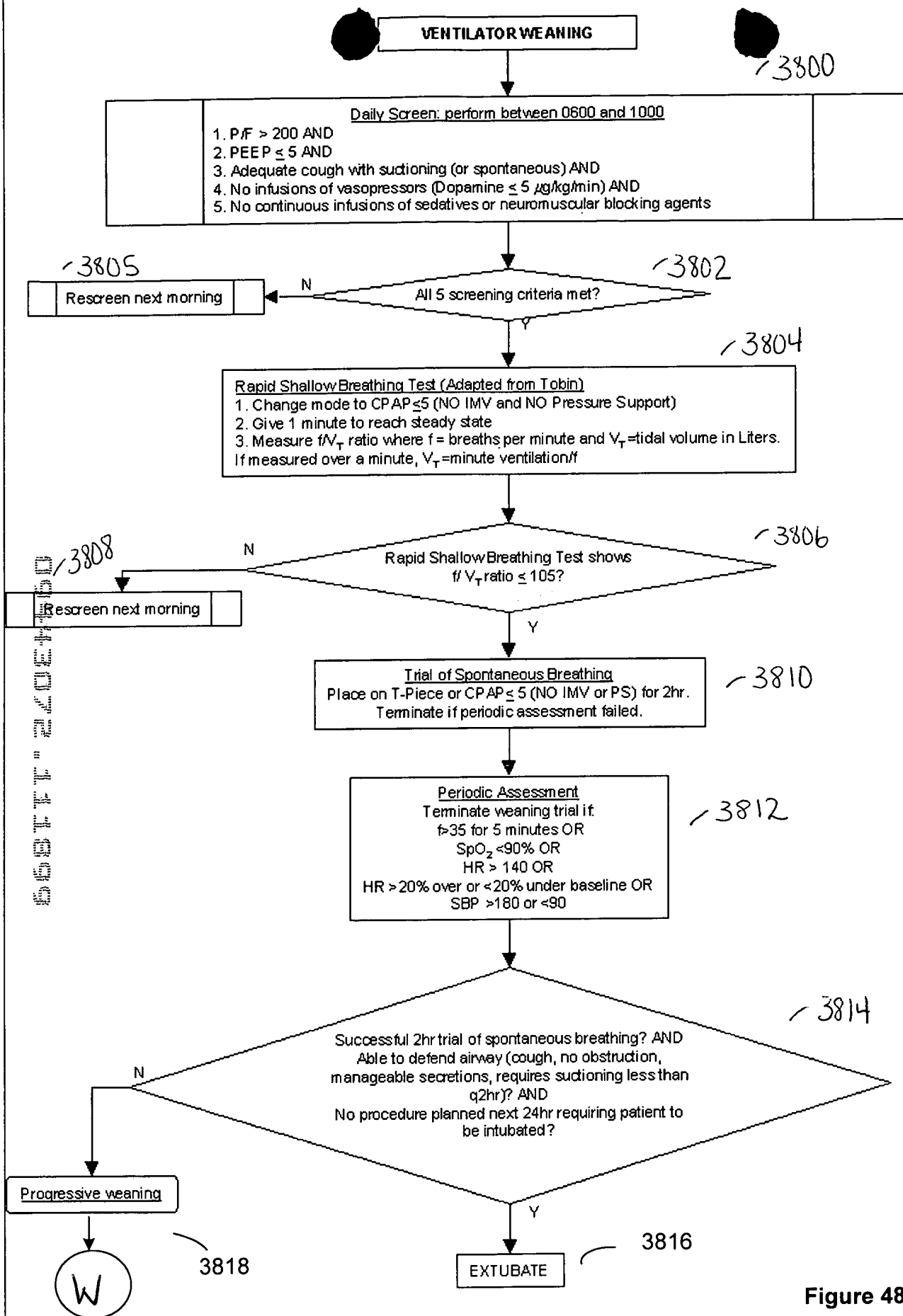


Figure 48

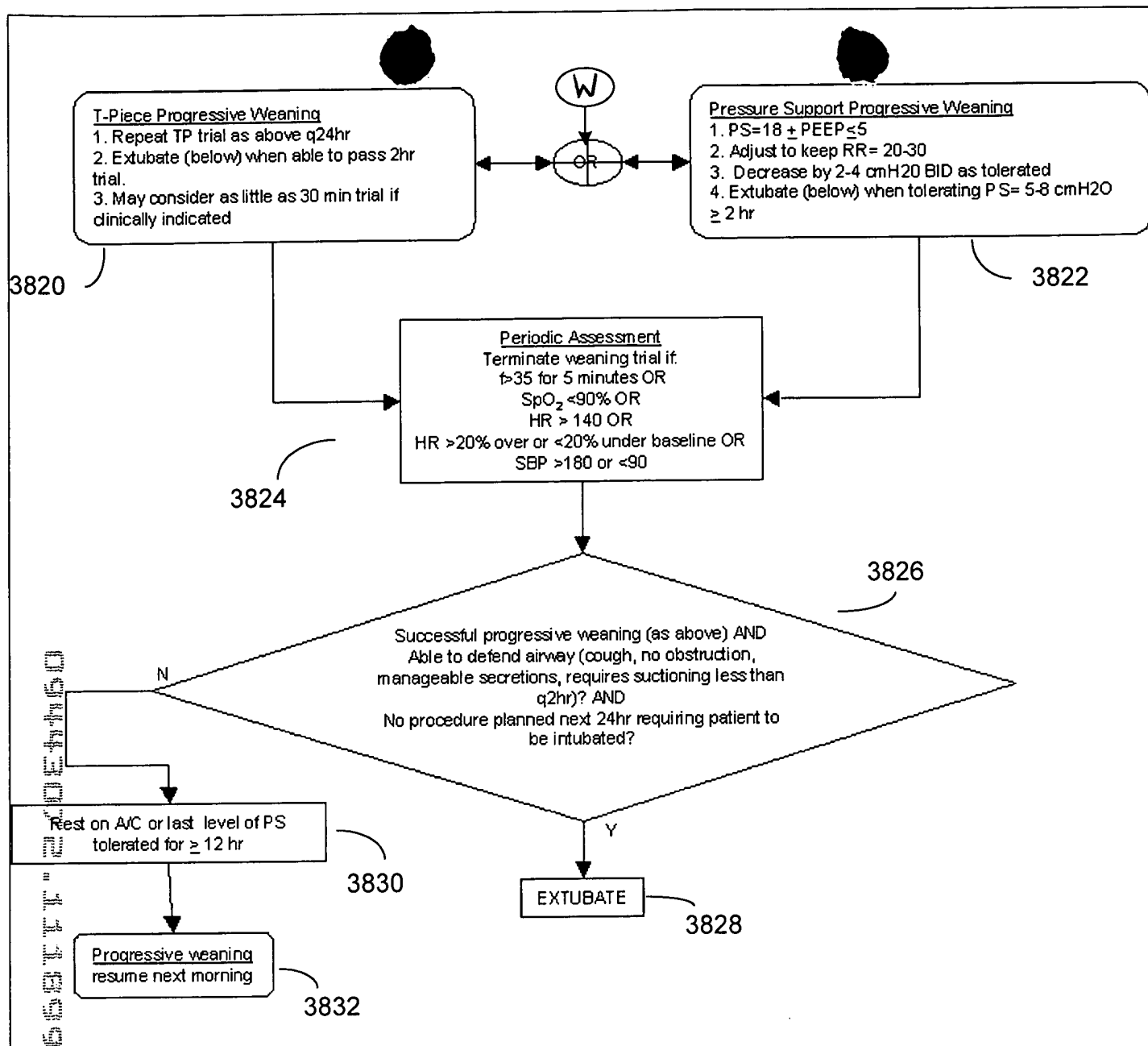


Figure 48A

Warfarin Dosing Algorithm

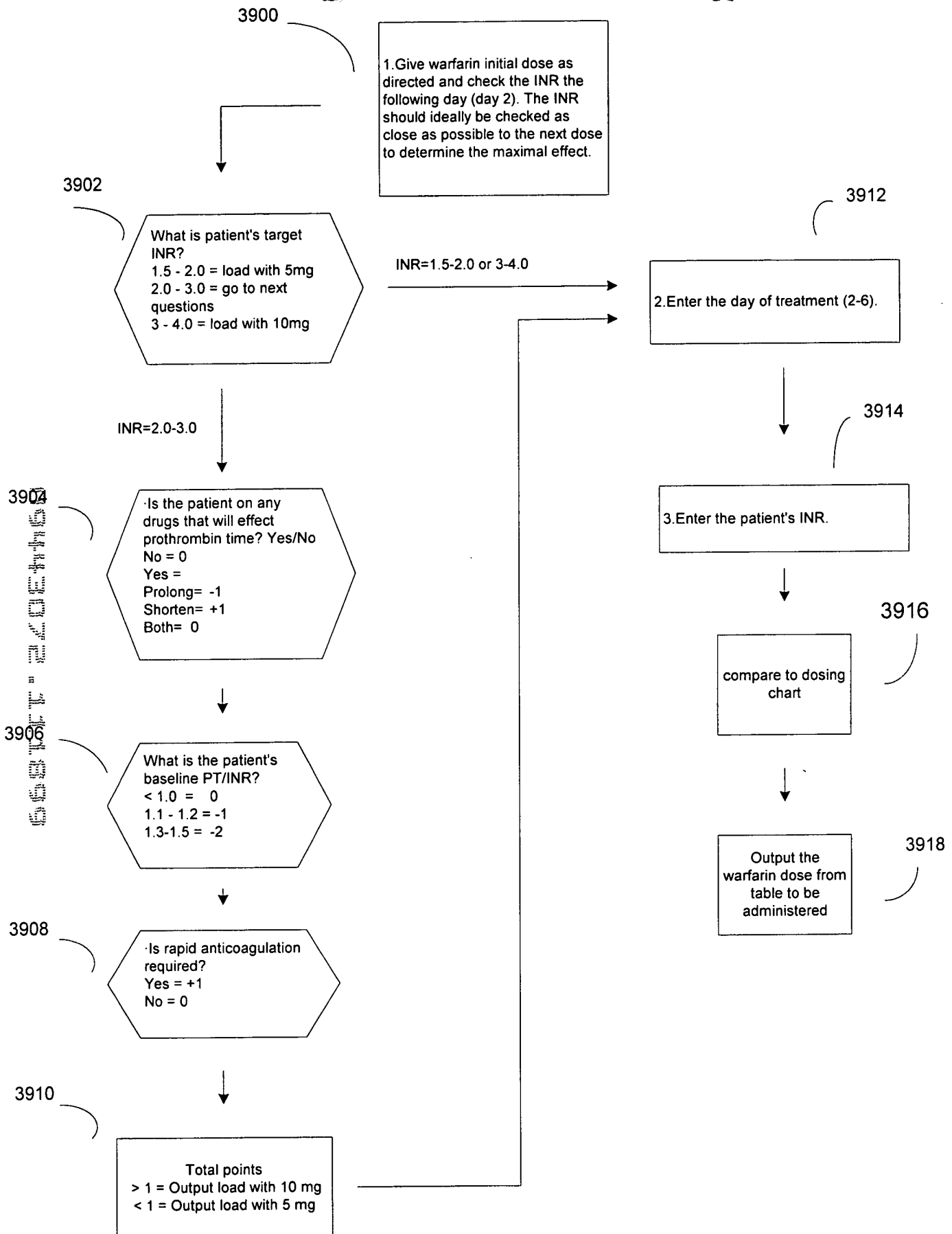


Figure 51

HIT-2 diagnostic algorithm

